TUBERCULOSIS ISOLATION AND RESTRICTIONS

AN IMPLEMENTATION GUIDE

TEXAS Health and Human Services
Texas Department of State Health Services

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I. Overview of Tuberculosis Isolation and Restrictions

Tuberculosis (TB) is a disease caused by *Mycobacterium tuberculosis* (*M. tb*), a bacteria that spreads from person to person through the air. TB usually affects the lungs, but it can also affect other parts of the body, such as the brain, kidneys, or spine.

Transmission from one person to another can occur when a person with TB disease of the lungs or throat projects the bacteria from their lungs into the air by coughing, sneezing, speaking, singing, or even by simply breathing. TB bacteria can stay in the air for several hours depending on the environment. People who breathe this air can become infected.

To prevent the spread of TB, Texas Department of State Health Services (DSHS) public health regions (PHRs) and local health departments (LHDs) must implement infection control measures to minimize disease transmission. These measures are administered through control orders signed by the local health authority (LHA) of each county, as per the **Texas Health and Safety Code Chapter 81**. They include placing a patient with confirmed or suspected TB disease in isolation. When a patient is in isolation, they are instructed to remain at their residence or other established locations until they are no longer infectious. To determine when a patient is no longer infectious, health departments have used the date the patient consistently tests negative on acid-fast bacilli (AFB) sputum smears.

National TB Isolation Guidelines

National guidelines for preventing TB transmission through TB isolation, among other measures, had been limited to congregate settings. In 1996, the Centers for Disease Control and Prevention (CDC) published guidance on **preventing *M. tb* in correctional facilities**, and in 2005, in **health-care settings**. As there were no national guidelines on TB isolation in community settings, isolation practices varied across the United States (U.S.). In Texas, PHRs and LHDs implemented TB isolation until patients' sputum test results converted to AFB smear negative. In most cases, this was at least 14 days after treatment began often extending to several weeks to months.

In 2023, The National TB Coalition of America (NTCA) conducted an evidence-based review to determine if varying TB isolation practices across the U.S. aligned with available data. Their review found that tracking AFB sputum smear results after treatment initiation was not likely the predominant indicator of TB infectiousness and that placing patients in prolonged isolation posed an increased risk of negative mental health outcomes. The review also found that starting an effective drug regimen rapidly reduces TB infectiousness, and in most cases, the TB isolation and restriction period could be reduced to a few days for patients in community settings.

On April 18, 2024, the *National Tuberculosis Coalition of America (NTCA) Guidelines for Respiratory Isolation and Restriction to Reduce Transmission of Pulmonary Tuberculosis in Community Settings* was published in **Clinical Infectious Diseases** and endorsed by the Infectious Disease Society of America (IDSA). These new guidelines do not replace CDC's 1996 and 2005 guidelines; however, they provide guidance for addressing TB isolation in community-based settings. The NTCA's guidelines also refer to respiratory isolation and restrictions (RIR) as a spectrum of individualized measures to reduce the spread of TB; they allow public health programs to re-consider the duration of TB isolation with varying restriction levels while balancing the impact on the patient and the community.

Texas' Implementation

In response to the NTCA guidelines, the DSHS TB and Hansen's Disease Section (TB Section) convened a multi-disciplinary workgroup to review and update state-level TB isolation protocols for PHRs and LHDs. Members included representatives from high, medium, and low incidence TB programs, DSHS recognized TB medical consultants from Heartland National Tuberculosis Center, and DSHS representatives in nursing, medicine, and epidemiology disciplines.

The workgroup met between June 27 and December 19, 2024, to review and determine how national guidelines could be successfully implemented in Texas based on the epidemiology of TB across the state. The workgroup adopted the term "TB isolation and restrictions" when referring to formal measures to reduce TB transmission and developed this implementation guide which incorporates previous guidelines for congregate settings as well as new guidelines for community settings, into one document.

How to Use This Guide

This implementation guide details how PHRs and LHDs should apply TB isolation and restriction measures for any patient in Texas, regardless of setting. TB programs should use this to determine when, how, and length of time patients should be under TB isolation and restrictions.

TB physicians, health care providers, local health authorities, program managers, nurse case managers, and public health field staff should review each step outlined in this document with consideration of each patient's unique situation. It is important to regularly re-evaluate restrictions placed on patients and determine when they are no longer necessary.

What to know about TB isolation and restrictions:

- Current evidence suggests that TB infectiousness reduces quickly (in as little as 24-72 hours) after a patient begins an effective TB drug regimen.
- New guidelines emphasize the duration of effective TB therapy as the primary consideration when releasing patients in community settings from TB isolation and restrictions.
    - Eligible patients can be considered for release after 5-14 doses of effective therapy, regardless of AFB sputum smear positivity.
- Placing patients in TB isolation with restrictions is a temporary measure to reduce the spread of TB from person to person and to protect the community.
- Patients should be released from TB isolation and restrictions removed as soon as it is determined they are unlikely to spread TB.
- Long-term isolation can have negative effects on patients' well-being and mental health.

II. Implementing TB Isolation and Restrictions

"While (TB) isolation and restriction measures may limit the spread of TB, prolonged isolation can be (very) detrimental to the mental health of the patient (Shah et. al, 2024)." Public health programs must balance community safety with the patient's health and well-being.

Follow these steps to determine how to implement TB isolation and restriction measures:

1) **Determine if TB isolation is necessary.**
   - Consider the age of the patient as well as disease site when determining need for TB isolation.
2) **Assign a restriction level.**
   - Review where the patient lives, works, and spends a significant amount of time when assigning restriction level.
   - Adjust restrictions as necessary to protect the patient and the community; re-evaluate weekly during the TB isolation period.
3) **Release the patient from TB isolation and restrictions.**
   - Follow evidence-based criteria to ensure patients do not remain isolated with restrictions longer than necessary.

Follow each step using tables and figures referenced in this guide. Use appendices to document TB isolation and restriction status and to supplement patient education.

Step 1: Determine if TB Isolation is Necessary

Patients with known or suspected pulmonary TB will have varying levels of infectiousness, ranging from being non-infectious to very infectious. The decision to place a patient in TB isolation should be based on their potential to transmit TB to others.

Young children are generally not able to transmit TB since they are typically not capable of forceful coughs and tend to have a lower bacterial burden. In addition, patients with extrapulmonary TB without pulmonary involvement are not likely to transmit TB. However, most patients with known or suspected pulmonary or laryngeal TB, who are not on an effective TB drug regimen to which they are likely susceptible, should be considered infectious. Use **Table 1** to determine if the patient requires TB isolation.

Table 1. Criteria to Determine if TB Isolation is Indicated

TB Isolation *IS NOT* Indicated
1.1 – Children <10 years, *unless* they have adult type TB* (if so, they fall into 2.1)
1.2 – Patients with extrapulmonary TB and no pulmonary involvement**
TB Isolation *IS* Indicated
2.1 – Patients with confirmed or suspected pulmonary or laryngeal TB
2.2 – Patients with extrapulmonary TB if pulmonary TB is not yet ruled out**
2.3 – Patients who are not adherent to or tolerant of anti-TB therapy

**Adult type TB: cavitation on chest imaging; and/or if sputum is collected, have smear positivity; and/or have suspected laryngeal TB.*

***Ruling out pulmonary TB includes obtaining three negative AFB sputum smears, a negative nucleic acid amplification (NAA), radiology not consistent with TB, with no respiratory symptoms. Refer to DSHS TB Section's Standing Delegation Orders (SDOs) for more details.*

Effective Therapy

Patients must be on an effective TB regimen to decrease the bacterial burden and reduce the ability to transmit TB before being released from TB isolation and restrictions. Use **Table 2** to determine if the patient is on effective anti-TB therapy (ATT) when making decisions on TB isolation and restrictions.

Table 2. Effective ATT for Reviewing TB Isolation and Restrictions*

Standard Therapy for Drug Susceptible TB	Regimens without Isoniazid (INH)	Regimens without a Rifamycin
Patient must be on: • At least isoniazid (INH) and rifampin (RIF)** with or without ethambutol (EMB), pyrazinamide (PZA).	Patient must be on: • Fluroquinolone (FQN)/ RIF**/EMB/ PZA OR • RIF**/EMB/PZA OR • FQN/RIF**/EMB	• Seek medical consultation regarding effective regimens that do not include a rifamycin, as per DSHS TB Section's SDOs.
To be considered effective, the regimen must be: 1) Administered by the PHR and LHD by directly observed therapy (DOT), which can include video DOT (vDOT), consecutively with no missed doses. • Considerations may be made by the PHR and LHD to accept inpatient medication administration records (MARs) on a case-by-case basis. 2) Well-tolerated by the patient, including no vomiting, with each dose fully taken and ingested. 3) Likely to be effective based on presumed *M. tb* specimen susceptibility.† • Ensure patient is not likely to be drug resistant± if they start standard therapy with at least INH and RIF**.		

*This table does not supersede clinical treatment recommendations. Refer to the **DSHS TB Section's SDOs** for standards of care and treatment details.*
***Rifabutin (RBT) can be used in place of rifampin; refer to the SDOs for treatment details when RBT is indicated.*
*†Nucleic acid amplification (NAA) results with rifampin testing (i.e., Xpert) should be obtained on an initial sputum sample for all patients suspected of having TB. Refer to the **DSHS TB Section's SDOs**.*
*± Risk factors for drug-resistant tuberculosis (DR-TB) are detailed in the **Texas TB Manual, Chapter VI**.*

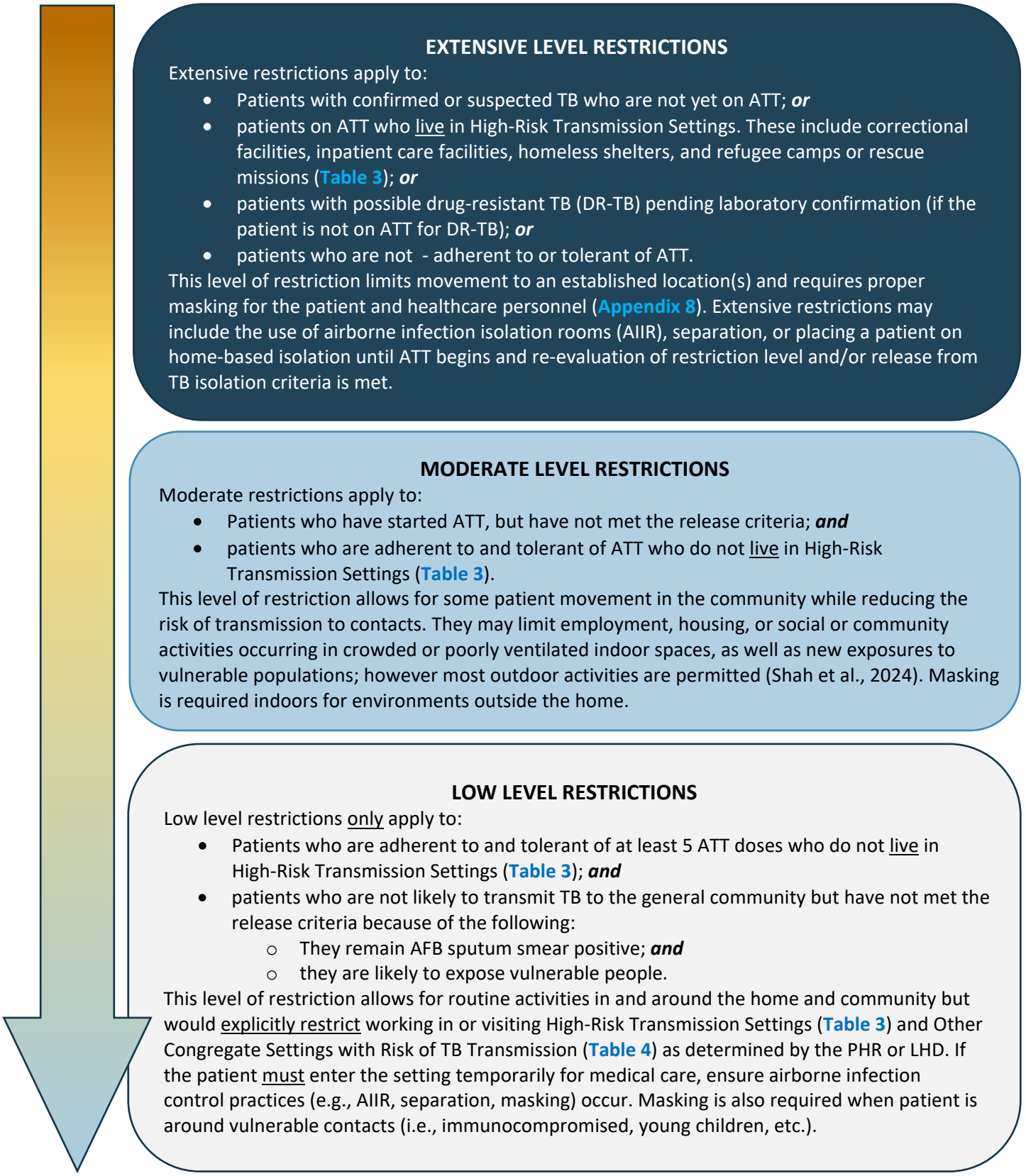
Step 2: Assign a Restriction Level if TB Isolation is Necessary and Re-evaluate Weekly

"Once a decision to implement respiratory isolation and restrictions has been made, the level of restrictions should be tailored to ensure reductions in TB transmission risk while limiting potential negative consequences to the patient (Shah et al., 2024)."

Overview of Restriction Levels: Extensive, Moderate, and Low Levels

PHRs and LHDs will place patients in TB isolation using the **Order to Implement and Carry Out Measures for a Client with TB (TB-410)**. PHRs and LHDs will also provide instructions to patients about their restriction level to limit risk of transmission to contacts. Restriction levels may change over time and patient status should be re-assessed at least weekly (every five days) to ensure they remain at the most appropriate level. For example, a patient may be placed on extensive restrictions before starting ATT then moved to moderate restrictions after starting ATT. Refer to **Figure 1** for an overview of each restriction level and **Appendix 1** for more details.

Figure 1. Restriction Level Applications



Refer to **Appendix 1** for detailed descriptions of each restriction level.

Assigning Restrictions Based on Patient Characteristics and Setting

Consider each patient's unique situation, as well as the setting where the patient lives, works, or spends a significant amount of time, when assigning restriction levels. Use **Figure 1**, **Table 3** and **Table 4** when determining the right level of restriction.

Patient Characteristics

A patient with known or suspected TB who has not yet begun ATT should be placed in extensive restrictions before switching to a lower level, as infectiousness is highest before treatment. When a patient begins effective ATT, the PHR or LHD shall consider if restrictions should be modified to moderate or low levels. The decision to modify restrictions should be based on patient adherence and tolerance of ATT, the effectiveness of the regimen based on presumed susceptibilities, as well as settings in which the patient lives or frequently visits. Evaluate restriction level at least weekly to ensure patients remain at the appropriate restriction level.

High-Risk Transmission Settings

If the patient is a resident of a High-Risk Transmission Setting (**Table 3**), extensive restrictions are required during the TB isolation period while at the setting. In these settings, environmental factors such as poor air circulation, crowded living quarters, and the potential for exposures to transient contacts increase the risk of TB transmission. Patients should be separated into AIIR or placed in an area where environmental controls help prevent the spread of TB (e.g., HEPA filtration, ultraviolet [UV] lights, etc.). Patients in these settings require a stricter criteria for release from TB isolation and restrictions. See ***Step 3***.

If the patient works or visits any High-Risk Transmission Setting (**Table 3**), PHRs and LHDs may consider extensive, moderate, or low-level restrictions while in the community, but the patient should *not* return to the setting until released from TB isolation and restrictions. If they *must* visit that location, (i.e., this is where they receive crucial medical care), steps should be taken to minimize transmission (e.g., AII, separation, masking, other environmental controls; refer to **Appendix 8**).

Table 3: High-Risk Transmission Settings

High-Risk Settings and their Populations				
Correctional Facilities*	**Inpatient Care Facilities***	**High-Risk Outpatient Settings***	**Homeless Shelters**	**Refugee Camps and Rescue Missions**
• Includes jails, prisons, federal detention facilities (i.e., Immigrations and Customs Enforcement [ICE]) and other detention facilities.	• Hospitals, skilled nursing facilities, long-term care facilities, nursing homes, etc. • These are inpatient settings housing individuals with varying risk factors.	• Includes dialysis units, cancer infusion centers, HIV treatment centers, transplant clinics, and dental-care settings.	• Includes safe houses, bunk houses, or a shelter where there is daily or weekly turnover of residents, thus potential for ongoing, new exposures.	• Includes unaccompanied children shelters. • These are non-stable settings; caution should be taken to prevent exposure of transient contacts.

For infection control in healthcare settings, refer to **Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Settings, 2005. For infection control in correctional facilities, refer to **Prevention and Control of Tuberculosis in Correctional Facilities, 1996**.*

Other Congregate Settings with Risk of TB Transmission

While High-Risk Transmission Settings pose the greatest risk of TB transmission, other congregate settings should be evaluated for risk of transmission. Therefore, if the patient lives, works, or spends time in any

location in **Table 4**, the PHR or LHD may consider either extensive, moderate, or low-level restrictions on a case-by-case basis. Ideally, patients should not visit settings in **Table 4** until released from TB isolation and restrictions. If they must visit that location, (i.e., this is their primary residence, or where they receive medical care), steps should be taken to minimize transmission such as separation, masking, and other environmental controls where possible; refer to **Appendix 8**.

Table 4. Other Congregate Settings with Risk of TB Transmission

Other Congregate Settings and their Populations

4.1 Settings with potentially immunocompromised or highly vulnerable people *including, but not limited to*:
• Adult daycares, senior centers, retirement homes.
• Other ambulatory-care outpatient settings and medical offices not listed in **Table 3** (refer to **Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Settings, 2005**).
• Settings where adults with TB may expose vulnerable children under the age of 5 years:
  ○ Settings where children under 5 years of age congregate indoors.
  ○ *Carefully consider* if there will be new exposures before releasing an adult TB patient back into the setting.

4.2 Children and adolescents in foster homes, boarding homes, group homes, orphanages, and halfway houses: • Consider a restriction level if the patient is released from another setting (e.g., hospital) to this setting, and there is potential for new exposures. • If a patient resides in any of these settings at the time of diagnosis, consider if other residents have been living there previously and would be screened in a contact investigation (CI). If so, the patient may not require extensive restrictions in the residence.
4.3 Kindergarten through 12th grade (K-12) schools: • Restrictions may apply to children <age 10 with adult-type TB (**Table 1**) and teachers before returning to school.
4.4 Dorms (*other than* shelters or bunk houses for unhoused people which are High-Risk Transmission Settings [**Table 3**]): • Includes college dormitories, camps for school-aged children, military dorm housing, etc.
4.5 Colleges and universities • Consider classroom size and duration of possible exposures, along with other areas students congregate; restrictions may apply for teachers, students, and volunteers.
4.6 Other congregate settings *as determined by the PHR or LHD*: • Consider indoor settings where people congregate that have poor ventilation/airflow, lack of UV light exposure, and other environmental concerns which may increase transmission risk.

Other General Settings

If a patient is adherent to ATT, is not likely to have DR-TB if on standard therapy, does not live, work, or spend time in settings listed in **Table 3** and **Table 4**, PHRs and LHDs can tailor an individualized plan that is moderate or low level until patient's status is reassessed. PHRs and LHDs should discuss the settings and locations where the patient plans to go and provide instructions on a case-by-case basis.

Patient Education and Documenting TB Isolation and Restriction Levels

PHRs and LHDs should discuss and document the patient's understanding of their TB isolation and restriction level, as well as its impact on their mental health. This includes educating on proper masking and discussing locations and people they should avoid while under these restrictions. Refer to **Appendix 3** for re-evaluating status weekly, **Appendix 4** for weekly documentation, and **Appendices 5-8** for patient letters and education.

Step 3: Release the Patient from TB Isolation and Restrictions

Patients are more likely to transmit TB before they begin ATT. The bacterial load decreases quickly after effective therapy begins, and, despite AFB smear positivity, the risk of transmission declines rapidly. *"Most patients are unlikely to transmit (TB) to others after the first few days (24–72h) of ATT initiation" (Shah et al., 2024).* Some instances, however, require longer durations of TB isolation to protect vulnerable contacts.

Deciding to release a patient from TB isolation and restrictions is contingent on the patient being adherent to and tolerant of an effective drug regimen to which they are likely susceptible that is provided by direct observation (see **Table 2**). In addition, patients should not have worsening TB symptoms. Finally, PHRs and LHDs must consider settings the patient frequents along with exposure to vulnerable contacts (**Tables 3** and **4**) before releasing from TB isolation and restrictions.

PHRs and LHDs will release most patients based on the number of ATT doses and not bacteriological results. However, sputum smear negativity is required for other patients where the risk of a TB exposure would impact vulnerable or susceptible contacts. **Table 5** details criteria for release of all patients, regardless of setting. Once released, patients can resume normal activities.

Release After Bacteriology Results Show Sputum Smear Negativity

High-Risk Transmission Settings (**Table 3**) pose a significant risk to potentially vulnerable and susceptible contacts. These settings include correctional facilities, inpatient care facilities, high-risk outpatient settings, homeless shelters, refugee camps and rescue missions. Patients who live, work, or frequent these settings must remain under TB isolation and restrictions until they have three consecutive AFB sputum smear negative results collected 8-24 hours apart, no worsening symptoms, and adherence and tolerance of ATT for at least five doses (if they never had a positive sputum smear) or 10-14 doses[1] (if initially sputum smear positive).

Patients who are not tolerant of or adherent to ATT must also have negative AFB sputum smear results and meet the additional criteria noted above before being released.

Release After Five ATT Doses

Patients who never had a positive AFB sputum smear result[2] and who are adherent with and tolerating ATT (regardless of setting) may be released from TB isolation and restrictions after five ATT doses. Patients who *have* had a positive AFB sputum smear result but do not live, work, or visit High-Risk Transmission Settings (**Table 3**) and who are not likely to expose new, vulnerable contacts, including children under age five years and immunocompromised individuals who have not yet been evaluated for TB, can also be considered for release after five doses of effective ATT.

Release After 10-14 ATT Doses

Patients who do not live, work, or visit High-Risk Transmission Settings (**Table 3**) may need more than five ATT doses before being released. Contributing factors include the extent of disease before therapy (e.g., cavitation, initial sputum smear and/or NAA status), as well as effectiveness and tolerability of the TB regimen (Shah et al., 2024). Also consider settings the patient visits (**Table 4**) and the likelihood of exposing

[1] 10-14 doses is the equivalent of two weeks' of therapy, depending on five days per week DOT or seven days per week if on vDOT.
[2] Obtain three initial sputum specimen collected consecutively, 8-24 hours apart; first specimen should be observed. See DSHS SDOs.

vulnerable people including children under age five and immunocompromised individuals. In these cases, consider extending ATT for 10-14 doses until releasing from TB isolation and restrictions.

Release After Consultation When ATT Extends Beyond 10-14 Doses

Special precautions may be considered if the risk of infectiousness is low (or unknown), but the impact of exposure would be high (Shah et al., 2024). In these cases, when TB isolation and restrictions extend beyond 10-14 doses of ATT for patients who do not live, work, or visit High-Risk Transmission Settings (**Table 3**), nurse case managers should check with the treating provider and discuss reasons for extension with the patient. Consultation with either the LHA, a DSHS regional medical director, the DSHS TB Section, or a **DSHS-recognized medical TB consultant** is recommended.

Table 5. Criteria to Release Patients from TB Isolation and Restrictions.

When to Release	A: Release Based on Bacteriology	B: Release After 5 ATT Doses	C: Release After 10-14 ATT Doses	D: Release After Consultation
Criteria to Release	1. Patients who live, work, or visit High-Risk Transmission Settings (**Table 3**). 2. Patients who are non-adherent to the treatment plan or are not tolerating ATT. The above patients may be released after having: • Three negative AFB sputum smears 8-24 hours apart; • 10-14 DOT doses[±]; • symptom improvement; *and* • adherence to and tolerance of ATT. [±]*If patient never had a positive sputum smear, release from TB isolation and restrictions after 5 ATT doses- see column B #1.*	1. Patients on ATT who never had a positive AFB sputum smear[*], are adherent with and tolerating ATT (*regardless of setting*). 2. Patients on ATT who were initially sputum smear positive and who do not live, work, or visit High-Risk Transmission Settings (**Table 3**) AND who: a) May[**] live, work, or visit Other Congregate Settings (**Table 4**); and/or b) baseline TB symptoms are not worsening (**Appendix 3**); and c) are not likely[†] to expose previously unexposed, vulnerable contacts.	1. Patients on ATT and who do not live, work, or visit High-Risk Transmission Settings (**Table 3**) who were initially sputum smear positive AND who: a) May[**] live, work, or visit Other Congregate Settings (**Table 4**) and the PHR or LHD decides longer than 5 ATT doses is necessary before release. b) Have delayed but subsequent improvement of baseline TB symptoms (**Appendix 3**).	1. Patients on ATT who do not live, work, or visit High-Risk Transmission Settings (**Table 3**), who remain AFB sputum smear positive, and who remain in TB isolation and restrictions after 10-14 ATT doses. Medical consultation is strongly recommended to determine when patients should be released from TB isolation and restrictions.

[*]*Obtain three initial sputum specimen collected consecutively, 8-24 hours apart, ideally the first specimen observed. Refer to DSHS TB Section's SDOs.*

[**]*PHRs and LHDs may consider releasing certain patients who live, work or frequent settings listed in **Table 4** on a case-by-case basis. Consider baseline bacteriology results, patient symptoms, setting, and likelihood of exposing previously unexposed vulnerable contacts when making that decision.*

[†]*Consider known exposures to new vulnerable contacts (children under age 5 and immunocompromised individuals) such as household contacts or planned time around such individuals where masking would still be required (and at minimum, low level restrictions would be needed).*

Considerations During and After TB Isolation and Restrictions

Patients who remain in TB isolation and restrictions must have an assessment weekly to ensure they remain on the right restriction level or can be moved to a lower level until released. Clinicians must ensure the patient is tolerating and responding to therapy (**Appendix 3**). The patient's status must be documented weekly (**Appendix 4**).

Placing Patients Back in TB Isolation and Restrictions After Removal

If a patient was released from TB isolation and restrictions, their AFB sputum smear remains positive, and they subsequently enter any High-Risk Transmission Setting (**Table 3**), the patient should be placed back in TB isolation with restrictions applicable to the setting and situation. This may include being placed in AII, masking, and using other environmental controls.

If a patient was released from TB isolation and restrictions but it is later determined that therapy was not effective (i.e., RIPE was started but drug-resistance later identified on a culture) the patient should be placed back in TB isolation and restrictions until an effective ATT regimen is started and criteria for release is met. Always re-assess status at least weekly until a patient can resume normal activities

Infection Control and Masking

Healthcare personnel (HCP) should always use proper airborne infection control measures (e.g., use N-95 or equivalent, UV filtration, etc.) until all patients have converted their AFB sputum smear results from positive to negative, even if the patient was released from TB isolation and restrictions. Ensure the patient is well-educated regarding their TB isolation status and that even when officially released from all TB isolation and restriction measures, they will still need to use a surgical mask and adhere to coughing etiquette when in contact with healthcare providers such as doctor's appointments, TB clinic visits, and home health care. In addition, remind the patient that if there are unexpected, *new* exposures to vulnerable people such as children under five years and immunocompromised people, surgical masking is required until AFB sputum smear results are negative. Refer to **Appendices 5-8** for patient education, instructions, and infection control measures.

Examples of TB Isolation and Restrictions:

- A 63-year-old female who lives with her spouse would be placed on extensive restrictions when starting ATT for suspected TB (sputum smear positivity, abnormal radiology, 4-week cough). After 5 ATT doses by DOT and showing adherence, tolerance, and no worsening of her cough, she could be considered for release from all TB isolation and restrictions after confirming she is not in contact with vulnerable contacts and has no plans to go to a congregate setting.
- A male resident of a homeless shelter who is AFB sputum smear positive with an abnormal CXR consistent with TB would be placed on extensive restrictions before and after starting ATT. He would be instructed to remain in a separate room using a surgical mask while indoors. The health department would coordinate food delivery or other essentials, as well as review the shelter's environmental controls to limit transmission, such as UV lights and HEPA filtration. He would be released from TB isolation and restrictions after three consecutive AFB smear negative sputa were obtained, upon symptom improvement, and completion of at least two weeks (10-14 DOT doses) of ATT.

Examples of TB Isolation and Restrictions, *continued*:

- A 17-year-old actively involved in high school and extracurricular activities would be placed on extensive restrictions before starting ATT Monday through Friday via DOT for extensive TB disease (cavitary lesions and a high sputum smear positivity). She would be instructed to stay at home and curtail all visits to the home, but virtual friend visits would be encouraged. After 5 ATT doses and showing tolerance and adherence, she could be instructed on moderate level restrictions. This includes driving to fast-food restaurants alone using the drive-through window and walking around her neighborhood with her 15-year-old sibling. She would be instructed not to return to class, visit with friends indoors, eat inside restaurants, or attend any indoor extracurricular activities. After 10 ATT doses, the health department would consider if she met the criteria for release or if a consult with the local health authority should be obtained.
- An inmate with a cavitary CXR and sputum smear positivity residing in a correctional facility would be placed on extensive restrictions. He would be moved to an AII cell and separated from other inmates until released from TB isolation and restrictions based on his bacteriology results (and other criteria). At the same facility, an employee newly diagnosed with TB and uncontrolled diabetes would be placed on moderate level restrictions after completing 5 ATT doses. She would be instructed not to return to work but would be allowed to visit family outdoors and run short, essential errands while masking. After she has been on ATT for 10 doses, the PHR would re-assess her clinical status. The PHR could decide to move her to low level restrictions; she could resume all community activities (going to the grocery store, attending church service, seeing a movie) but would not be cleared to return to work until three consecutively negative AFB sputum smears.
- A sputum smear positive mother of a seven-week old baby would be placed in TB isolation on extensive level restrictions after starting ATT. After five doses and showing no worsening symptoms, she would be moved to low-level restrictions because of her ongoing post-partum doctor's visits, and while her infant remained under evaluation for TB. The PHR would coordinate with the doctor's office to ensure the patient was not sitting in the waiting room, and she would be instructed to wear a mask during the visit. While at home, she would continue to mask when around her newborn, but she could resume normal activities including errands and family dinners. After 10 doses of DOT Monday through Friday, the PHR would consider releasing her from TB isolation and restrictions if she continued to show improvement of symptoms and if the infant had successfully started window prophylaxis.
- A 56-year-old dialysis patient would be placed on extensive restrictions upon his TB diagnosis (including NAA positive, smear positive, and bilateral lower-lobe infiltrates). Dialysis care would be coordinated with a hospital using AII, all staff using N-95 masks, and the patient wearing a surgical mask. After 5 ATT doses, the health department could consider moving the patient to low level restrictions when at home (if he remained adherent and tolerant of ATT and did not have worsening TB symptoms). He could go grocery shopping, garden, visit friends (if none were immunocompromised), but he would continue to follow extensive restriction requirements and infection control practices when in dialysis (AII, masking, etc.). He would remain in TB isolation until he had three negative AFB sputum smear results and at least the equivalent of two weeks of ATT.

III. Additional Public Health Measures

Releasing patients from TB isolation and restrictions impacts other measures used to protect the public's health. This includes how PHR and LHD public health programs handle contact investigations, court orders, and other interventions designed to ensure TB is not transmitted. The following sections outline how PHRs and LHDs should consider TB isolation and restrictions in the setting of public health interventions.

Contact Investigations

Contact investigations (CI) are an integral part of TB prevention and control activities and the primary vehicle for identifying individuals exposed to people with infectious TB disease. They are designed to prevent transmission of TB disease by identifying, testing, and treating those who have been exposed to TB. Contact investigations should be initiated for all patients with suspected or confirmed pulmonary, pleural, or laryngeal TB disease as outlined in the **Texas TB Manual**.

The CDC's **guidelines from 2005 for TB contact investigations** use terminology to describe TB transmission, exposures, and timeframes for contact testing. They refer to a patient's "infectious period" and define the end of this period based on bacteriology; having at least three consecutive negative AFB sputum smear results. "Break in contact" is defined as the last physical date the person with TB was around a contact, regardless of TB isolation and restriction status.

Releasing a patient from TB isolation and restrictions despite their AFB sputum smear positive results is not necessarily equivalent to the end of their infectious period. While the evidence shows that a patient's infectiousness declines rapidly within days after starting ATT (Shah et al., 2024), there may be vulnerable contacts or prolonged exposures that warrant a conservative approach to testing. For CI purposes, the end of the infectious period should continue to be defined based on bacteriology, which is obtaining at least three consecutive negative AFB sputum smear results. Break in contact remains as the last physical date that the person with TB was around a contact, regardless of TB isolation and restriction status. Second-round testing for contacts should be initiated 8-10 weeks after break in contact or end of the infectious period (based on bacteriological results of the TB case) whichever is earlier.

If additional contacts are identified after the patient has been released from TB isolation and restrictions, but while they remain AFB sputum smear positive, PHRs and LHDs should review the nature of the exposure, risk factors of the contact, and first-round testing results, if available, to determine risk and assess if testing is needed.

Refer to the **Texas TB Manual** for more information about contact investigations, including testing and screening requirements.

Examples of Contact Investigations:

- An 18-year-old male who works at a fast-food restaurant would be allowed to return to work after 5 doses of ATT based on LHD assessment, even if his AFB sputum smears results remain positive for another 2 weeks. Second-round testing for contacts at his worksite would be based on the date of his sputum smear conversion and not the date he was released from TB isolation.

Examples of Contact Investigations, *continued*:

- A pre-kindergarten (pre-K) teacher who is AFB sputum smear positive would be placed on moderate restrictions after 5 doses and then moved to low-level restrictions until sputum smear conversion; at that point, her only restriction would be to not return to work until her sputum smear conversion. Second round testing for contacts at the worksite (including the children) would be 8-10 weeks after the teacher's last physical day at work. Household contacts and anyone outside the workplace that she had contact with while sputum smear positive would be tested based on the date of her sputum smear conversion.
- A homemaker and mother to a 3-year-old child could be removed from all TB isolation and restrictions after 5 ATT doses and LHD evaluation (after ensuring she is not around other children). Her child would be started on window prophylaxis after testing interferon gamma release assay (IGRA) negative with a normal CXR and normal physical exam on first-round screening. Once the mother has three negative sputum smears (and not the date that she was removed from TB isolation and restrictions), the health department would test the child for second-round testing based on sputum conversion date (and not the date she was removed from TB isolation and restrictions).

Court Ordered Management

Court Ordered Management (COM) is a last-resort intervention to ensure patients diagnosed with confirmed or suspected pulmonary or laryngeal TB disease are adherent to their treatment plan. COM applies to patients whose actions pose a risk of TB transmission to the public. When patients with confirmed or suspected pulmonary or laryngeal TB do not take effective ATT, they may knowingly or unintentionally spread TB to others.

For patients who do not remain adherent to the plan of care, regardless of when they were released from TB isolation and restrictions, the LHA, DSHS regional medical director and/or licensed healthcare provider may consider pursuing COM. Documentation of site of disease, pre-therapy bacterial burden, and signs of non-adherence to the care plan may support decisions to move forward with a court order. Refer to the **Texas TB Manual** for more information about COM.

Federal Travel Restrictions

Do Not Board (DNB) and Public Health Lookout (LO) are two complimentary federal public health tools to prevent the spread of infectious diseases during travel. These tools can be used when a patient with confirmed or suspected infectious TB attempts to "*enter the United States at any port of entry - seaport, airport, or land border*" (**CDC, Travel Restrictions to Prevent the Spread of Contagious Disease**).

Federal travel restrictions are managed by the CDC and the Department of Homeland Security (DHS). Criteria for addition and removal of individuals from the federal travel restriction list are defined by these two entities and may vary based on drug resistance status and/or initial extent of disease (i.e., AFB sputum smear results and cavitation on chest imaging).

Patients removed from TB isolation and restrictions may still qualify for federal travel restrictions. Likewise, a patient removed from TB isolation and restrictions by the PHR and LHD may not be eligible for removal from the DNB/LO list.

Refer to the **Texas TB Manual** for more information about federal travel restrictions.

Interjurisdictional Notification (IJNs) for Patients Traveling In and Out of State

If a patient travels outside of Texas, PHRs and LHDs must coordinate before travel, when possible, to determine if the receiving state has isolation criteria that differs from these guidelines. For example, a patient released from TB isolation and restrictions who remains AFB sputum smear positive and is moving to another state may be placed back in isolation if the receiving state uses other isolation protocols. Patients should be advised accordingly and health departments should coordinate with the DSHS TB Section and receiving state. See the IJN requirements outlined in the **Texas TB Manual.**

Sputum Collection

Sputum collection allows PHRs and LHDs to evaluate a patient's bacterial burden, provide an effective drug regimen, gauge response to therapy, and informs CI decisions. In some cases, it is required to release a patient from TB isolation and restrictions (see **Table 5**). PHRs and LHDs should continue to follow the DSHS TB Section SDO requirements for sputum specimen collection; at minimum, sputum should be collected at baseline and every two weeks for patients with pulmonary or laryngeal TB until three consecutive specimens are negative on AFB smear. Subsequent sputum collection is required monthly until two consecutive specimen are negative on culture, at least one month apart. For patients with drug-resistant pulmonary or laryngeal TB, specimen is collected monthly for the duration of therapy. Refer to the **DSHS TB Section's SDOs** for sputum collection requirements.

Appendix 1: Defining Extensive, Moderate, and Low-Level Restrictions

Defining Restrictions

Extensive Restrictions:

1. Residents or visitors of High-Risk Transmission Settings (**Table 3**) should be separated from others; this may include remaining in an AIIR or separate space with environmental controls such as HEPA filters or UV lights.
2. Individuals in an outpatient, community setting should strictly limit their movement to an agreed-upon location, such as a home or other residence.
3. Individuals may not return to work or visit a High-Risk Transmission Setting (**Table 3**) unless required for residence or medical care. If so, steps must be taken to minimize transmission risk (e.g., AII, masking, etc.)
4. Individuals may not return to work or visit Other Congregate Settings with TB Transmission Risk (**Table 4**) unless necessary for residence or medical care. If so, additional measures to reduce TB transmission risk may be warranted, including but not limited to use of PPE (e.g., N95 masks) for close contacts, face masks (i.e., surgical masks) for TB patients, and efforts for improved ventilation (e.g., open windows during transportation in cars, negative-pressure rooms, or HEPA filters) (**Appendix 8**).
5. When an individual leaves the primary site of their TB isolation (such as for an unplanned/urgent healthcare visit), additional measures to reduce TB transmission risk may be warranted as specified in #3 and #4.
6. Anyone not currently residing in the residence with the patient with TB should not visit unless approved by the PHR or LHD. If approved, they should wear PPE (e.g., N95).

Moderate Restrictions:

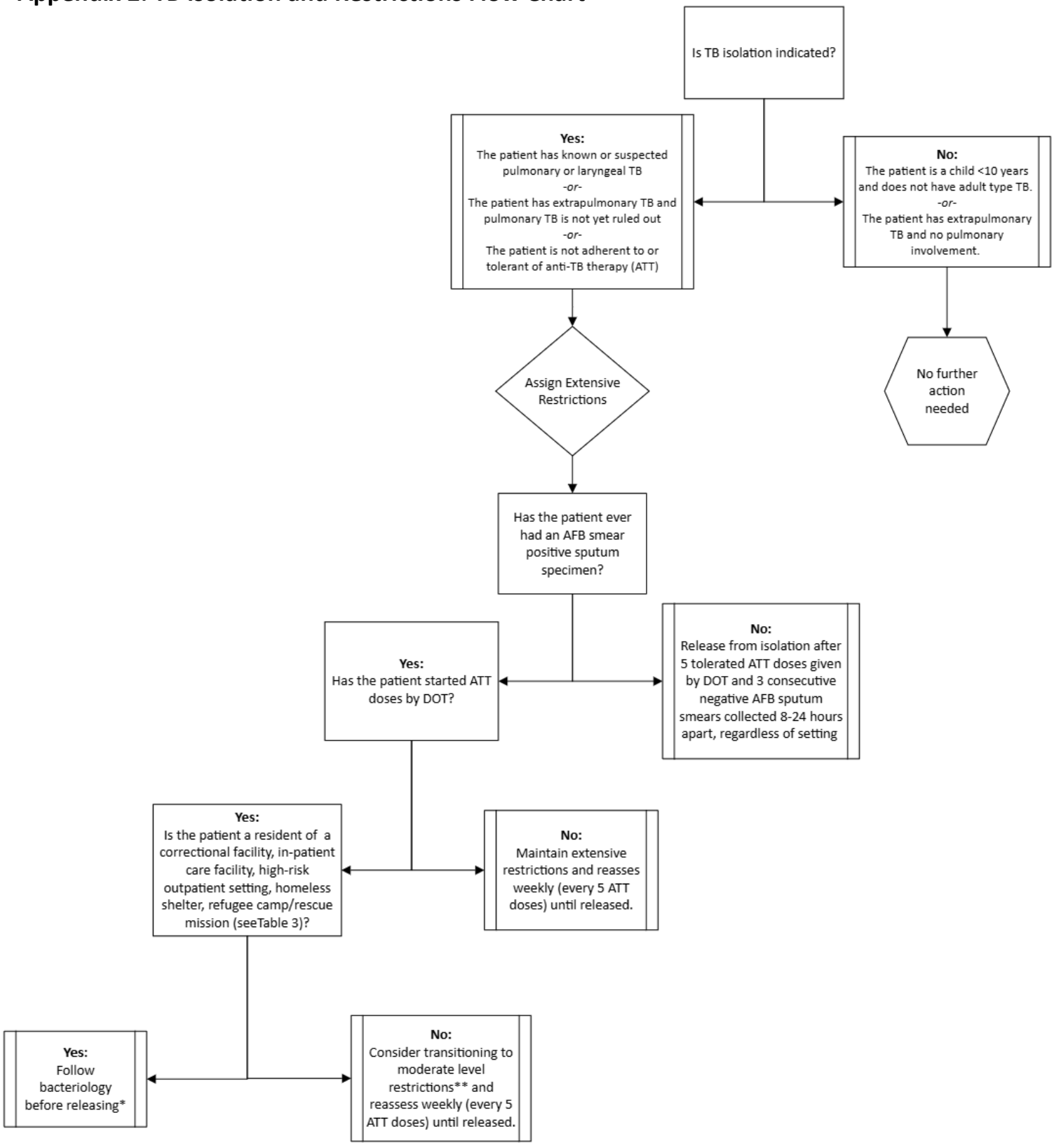
1. Individual spends majority of time at an agreed-upon location, such as a home or residence.
2. Individual may leave the location for outdoor activities and some essential indoor activities:
   a) Individual may engage in most activities in outdoor or well-ventilated environments.
   b) Depending on where the patient lives, works, or spends time, they may not be allowed to return to that setting while in isolation. Consider especially if the individual works in a High-Risk Transmission Setting (**Table 3**) or Other Congregate Settings with TB Transmission Risk (**Table 4**).
   c) Strategies to minimize aerosols including wearing a mask (i.e., surgical mask, N95) should be utilized for indoor activities, particularly if there is contact with previously unexposed individuals. When an individual leaves the primary site of their TB isolation (such as for a healthcare visit), additional measures to reduce TB transmission risk may be warranted, including but not limited to use of PPE (e.g., N95 masks) for close contacts, face masks (i.e., surgical masks) for TB patient, and efforts for improved ventilation (e.g., open windows during transportation in cars, negative-pressure rooms, or HEPA filters).
   d) Indoor activities should avoid prolonged (e.g., multiple hours), or repeated close contact with others, particularly those not previously exposed or vulnerable people (e.g., children, immunosuppressed, etc.).
   e) Indoor activities in settings of poor ventilation or dense populations should be avoided.
   f) In settings with a higher risk of transmission (e.g., healthcare visit), or potential risk of transmission to vulnerable populations (e.g., immunosuppressed, children), additional measures to reduce transmission risk may be warranted as specified in c) above.
   g) Visitors should be avoided unless approved by the PHR or LHD and then should wear PPE (e.g., N95).

Low-Level Restrictions:

1. Individual may not return to work or visit a High-Risk Transmission Setting (**Table 3**) unless required for medical care; if so, follow infection control practices applicable to the setting (e.g., AII, masking, etc.).
2. Individual may not return to Other Congregate Settings with TB Transmission Risk (**Table 4**), as determined by the PHR or LHD.
3. Individual should mask around children under age 5 years and other vulnerable contacts (immunocompromised individuals) when sharing indoor air in confined location(s).
4. Otherwise, individual may move around the community with no other restrictions.

Table adapted from: ***National Tuberculosis Coalition of America (NTCA) Guidelines for Respiratory Isolation and Restrictions to Reduce Transmission of Pulmonary Tuberculosis in Community Settings | Clinical Infectious Diseases | Oxford Academic***

Appendix 2: TB Isolation and Restrictions Flow Chart



*Following bacteriology includes: three negative AFB sputum smears collected 8-24 hours apart, 10-14 ATT doses (5 or 7 days per week), symptom improvement, and treatment adherence.

**Seek consultation for patients remaining on isolation after 10-14 ATT doses. Engage the local health authority, DSHS regional medical director, DSHS TB Section, or a DSHS recognized medical TB consultant

Appendix 3: Patient Assessments During TB Isolation and Restrictions

Decisions to release a patient from TB isolation and restrictions, or transition to lower or higher restriction levels, should be made based on the setting where the patient is being released, contacts they are around, the patient's tolerance of and adherence to an effective anti-TB therapy (ATT), as well as their clinical assessment. This form is intended to document the clinical assessment (e.g., improvement or worsening of a cough, weight loss or weight gain, etc.). The authorized licensed nurse, licensed healthcare provider (LHP) or LHP's designee may perform this assessment at least weekly (every five days), and document results until patient is released from TB isolation and restrictions. *Complete a new form weekly until fully released*.

Patient's Name: _____ Date of Birth: _____

Assessment performed by: _____ Title: _____

Assessment Date:_____

Date	Interval of Assessment*	Weight Lbs	Disposition (*include when patient is placed in TB isolation, restriction level, and date removed*)
	Baseline**		
	Week 1		
	Week 2		
	Week 3		
	Week 4**		
	Week 5		
	Week 6		
	Week 7		
	Week 8**		

**Assessments should occur at least weekly while under TB isolation and restrictions.*
***Timeframe when weight is required, unless otherwise requested by the LHP.*

Tuberculosis Signs and Symptoms			
TB Signs/Symptoms	**Baseline**	**Weekly**	**Upon Release from TB Isolation and Restrictions**
Cough	No ☐ Yes ☐	No ☐ Yes ☐	No ☐ Yes ☐
Fever	No ☐ Yes ☐	No ☐ Yes ☐	No ☐ Yes ☐
Chills	No ☐ Yes ☐	No ☐ Yes ☐	No ☐ Yes ☐
Night Sweats	No ☐ Yes ☐	No ☐ Yes ☐	No ☐ Yes ☐
Hemoptysis	No ☐ Yes ☐	No ☐ Yes ☐	No ☐ Yes ☐
Loss of appetite	No ☐ Yes ☐	No ☐ Yes ☐	No ☐ Yes ☐
Other:	No ☐ Yes ☐	No ☐ Yes ☐	No ☐ Yes ☐

Patient's clinical status during assessment: ☐ Stable ☐ Improving ☐ Worsening

Mental Health Check-In			
Use this section to document a baseline and weekly mental health check-in during TB isolation and restrictions. Document any interventions and communication with the licensed healthcare provider when indicated. Interventions for services can include **https://findhelp.org/**, **https://www.211.org/about-us/your-local-211** or other local services.			
Questions	**Baseline**	**Weekly**	**Notes and Interventions to Assessment Findings**
Are you having feelings of sadness, anger, depression, anxiety?	No ☐ Yes ☐	No ☐ Yes ☐	
Are you feeling stable/able to address your needs during your TB isolation and restriction period?	No ☐ Yes ☐	No ☐ Yes ☐	
Do you have any physical needs (e.g., food delivery, needs for housing, etc.)?	No ☐ Yes ☐	No ☐ Yes ☐	
Do you have any social needs (e.g., mental health services, substance use recovery, childcare, etc.)?	No ☐ Yes ☐	No ☐ Yes ☐	
Other:			

Document any additional notes regarding mental health evaluation, including interventions to mental-health check-in status:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Appendix 4: Documenting TB Isolation and Restriction Status

***Directions**: TB isolation and restriction status should be evaluated initially and weekly until all restrictions are removed. Therefore, complete this form at initial intake and complete a new version of this form every five business days (weekly) throughout course of care when making any decisions on TB isolation and restrictions.*

Name of Patient: _____DOB: ____ /_____/_____

Health Department: _____

Name of Nurse Case Manager: _____

Name of TB Provider/TB Physician: _____

Section I: Date and Time of Evaluation, Patient Plans

Date of Evaluation: _____

Timing of Evaluation:

☐ Initial ☐ Week 1 ☐ Week 2 ☐ Week 3 ☐ Week 4 ☐ Other:_____

Where does the patient plan to stay (where will the patient be sleeping) this week?
Include the address and location type (e.g., home). This will be referred to as the "stay location".

_____
_____
_____
_____

Places the patient needs to travel/visit initially/this week:

☐ Work: _____

☐ School: _____

☐ Volunteer: _____

☐ Childcare: _____

☐ Transportation/Travel plans: _____

☐ Medical/Dental appointment:_____

☐ Other:_____

_____

☐ No plans to leave the "stay location"

Section 2: TB Isolation and Restriction Status

Document patient's TB isolation and restriction status until released.

Step 1: Determine if TB Isolation is Indicated.

☐ Yes, isolation is indicated. Date placed in TB isolation: _____

- ☐ Patient has known or suspected pulmonary or laryngeal TB (circle which one).
- ☐ Patient has extrapulmonary TB and pulmonary disease is not yet ruled out.
- ☐ Patient is not adherent to or tolerant of therapy.

☐ No, isolation is not indicated. Select reason, and **do not continue** with this form unless status changes.

- ☐ Child is under age 10 years old and does not have cavitation on chest imaging; if sputum was collected, was not AFB smear positive.
- ☐ Patient has extrapulmonary TB and pulmonary disease has been ruled out.

Step 2: If Isolation is Indicated, Assign Restriction Level.

Ensure patient understands the restriction levels (see Patient Acknowledgement Letter, **Appendix 5**). *NOTE: Restriction level may change during the TB isolation period; document when changes occur. For example, document if a patient moves from extensive to moderate level restrictions after starting ATT and again when the patient later moves from moderate to low-level restrictions if applicable.*

	☐ Extensive	☐ Moderate	☐ Low
List places that patient can travel to or visit, specifying any masking or infection control measures, if needed.			
List any places the patient should NOT travel to or visit.			

Step 3: Release from TB Isolation and Restrictions When Criteria are Met.

Complete #1 if patient must have negative bacteriology results before releasing.

1. Patient needs at least three negative AFB sputum smear results and at least 5 ATT doses and:

☐ Is released. Date of release: _____.

- ☐ Lives in, works, or visits a High-Risk Transmission Setting (**Table 3**) and 3 consecutive sputum collected 8-24 hours apart are AFB smear negative; patient has symptom improvement and is adherent to therapy.
- ☐ Other, specify: _____

☐ Is not released; will continue to evaluate weekly.

- ☐ Lives in, works, or visits a High-Risk Transmission Setting (**Table 3**) and does not have 3 consecutive negative AFB sputum collected 8-24 hours apart and symptom improvement.
- ☐ Non-adherent to therapy.
- ☐ Not tolerating ATT.
- ☐ Other, specify: _____

Complete #2-4 as applicable if patient is eligible for release based on number of ATT doses.

2. Patient has had 5 ATT doses and:

☐ Is released. Date of release: _____.

- ☐ Never had a positive AFB sputum smear result, adherent to DOT, tolerant of ATT, no worsening symptoms.
- ☐ AFB sputum smear positive but does not live in, work or visit in High-Risk Transmission Settings (correctional facilities, in-patient facilities, high-risk outpatient settings, homeless shelters, and refugee camps or rescue missions [**Table 3**]) **AND** does not live, work, or frequent Other Congregate Settings with Risk of TB Transmission (**Table 4**) **AND** is on ATT to which they are likely susceptible; **AND** baseline TB signs and symptoms are not worsening **AND** not likely to expose children under age 5 or immunocompromised individuals.

☐ Is not released – will continue to evaluate weekly.

- ☐ Lives in, works, or visits a High-Risk Transmission Setting (**Table 3**).
- ☐ Lives, works, frequents Other Congregate Settings with Risk of TB Transmission (**Table 4**).
- ☐ DR-TB is not ruled out (has risk factors or further testing pending); patient is not on ATT for DR-TB.
- ☐ Baseline TB signs and symptoms worsening.
- ☐ Is in contact with a child under age 5 years or immunocompromised individual.
- ☐ Other:_____

3. Patient has had 10-14 ATT doses and:

☐ Is released. Date of release: _____.

- ☐ Does not live in, work or visit a High-Risk Transmission Setting (**Table 3**).
- ☐ Lives, works, or frequents Other Congregate Settings with Risk of TB Transmission (**Table 4**) and the Health Department Provider has determined patient can be released.
- ☐ Had delayed but subsequent improvement of baseline TB signs and symptoms.
- ☐ Other:_____

☐ Is not released – will continue to evaluate weekly.

- ☐ Lives in, works, or visits a High-Risk Transmission Setting (**Table 3**).
- ☐ Lives, works, or frequents Other Congregate Settings with Risk of TB Transmission (**Table 4**) and the Health Department Provider has determined that TB isolation and restrictions should be extended past 14 ATT doses (will re-assess weekly until fully released).
- ☐ DR-TB is not ruled out (has risk factors or further testing pending); patient is not on ATT for DR-TB.
- ☐ Baseline TB signs and symptoms worsening.
- ☐ Other:_____

4. Patient has had over 10-14 ATT doses and a consultation* is needed to release:

Name/title of Consultant: _____ Date of Consult: _____

☐ Is released. Date of release: _____.

- ☐ Does not live in, work, or visit a High-Risk Transmission Setting (**Table 3**) but had slow TB symptom improvement; consultant recommended release from TB isolation and restrictions at this point.
- ☐ Lives, works, frequents Other Congregate Settings with Risk of TB Transmission (**Table 4**) and remains AFB sputum smear positive; consultant recommends release from TB isolation and restrictions at this point.
- ☐ Other, specify:

☐ Is not released; will continue to evaluate weekly based on consultation.

Consultation should occur with the treating TB physician or provider, and may include a DSHS regional medical director, local health authority, DSHS TB Section, or a **DSHS recognized TB medical consultant.*

Appendix 5: Patient Acknowledgement

Patient's Name: _____ Date of Birth: _____

Conditions for release from TB isolation and restrictions:

Based on information available at this time, you (probably/definitely) have TUBERCULOSIS (TB), which is a serious communicable disease. For you to be treated successfully, to decrease the possibility others will become sick, and to remain out of isolation, you must do the following: (Please initial each item).

_____ Keep all appointments with clinical staff as instructed.
_____ Follow all medical instructions from your physician or clinic staff regarding treatment for your TB.
_____Come to the Public Health Department Clinic or be at an agreed location and time for taking Directly Observed Therapy (DOT) or for video DOT (vDOT).
_____Do not return to work or school until authorized by your clinic.

Considerations/precautions after release from TB isolation and restrictions:

At this time, you have taken enough medication that you likely will not pass the disease to others, but you may still need to be cautious in certain settings. Even though you are released from TB isolation and restrictions and are free to move around the community for normal activities, please understand you may need to follow these instructions until further notice (health department will check if applicable):

☐ Avoid prolonged, close contact with very young children (less than 5 years old), the elderly, and/or anyone that you know or think is ill that we have not already identified and discussed. If you must be around these types of people, you must wear a surgical mask unless otherwise instructed by the health department.
☐ Wear a surgical mask when in a hospital, medical, or any clinical environment.
☐ Not applicable.

Return to work/school after release from TB isolation and restrictions:

You currently work/attend school at _____ in the position of a/an _____and it has been determined you may/may not return to work at this time. *If you are unable to return to work now, we will continue to assess your potential return on a weekly basis.*

Signature/Acknowledgement:

Your signature below means that you have fully read and understand this document. You also acknowledge that your isolation release status may be revoked if you do not adhere to the directions of your health department physician/clinic.

Patient Signature: _____ Date: _____

Witness/Nurse: _____ Date: _____

Appendix 6: Release from TB Isolation and Restrictions Letter

<Date>

<Patient Name>

<Address>

Dear <NAME>,

The purpose of this letter is to inform you that you may:

☐ Participate in outdoor activities without restriction.

☐ Participate in most indoor activities, wearing a surgical mask if you are around someone very young, the elderly, and/or someone who is sick, including masking at all medical appointments.

☐ Return to work.

Or

The purpose of this letter is to inform you that you may return to all activities without restrictions. You are cleared to return to work.

Please feel free to contact our office with any questions or concerns at <Number>.

Sincerely,

<Name>

Local or Regional Medical Director/Public Health Nurse

<Name of Local or Regional TB Program Here>

Appendix 7: Patient Education

Why are TB Isolation and Restrictions Important?

Tuberculosis (TB) disease, especially TB of the lungs, can spread to others. To prevent this, you may be placed in TB **isolation with restrictions** to limit spreading the disease.

TB isolation and restrictions are temporary measures to keep others safe.

Isolation Settings

1. **Home Isolation**: If your health department TB provider determines it's safe, you may stay at home. It is important to follow all the instructions given by your health department TB provider.
2. **Hospital Isolation**: In some cases, you may need to stay in a hospital where special measures are in place to prevent the spread of TB. The hospital will provide instructions on what measures are needed.

Isolation Guidelines

1. **Stay in your designated area**: If you are on home isolation, stay in a separate, well-ventilated room and avoid common areas.
2. **Wear a mask**: If you must be around others (e.g., going to medical appointments), wear a surgical mask to reduce the spread of TB.
3. **Limit visitors**: Restrict visitors to only essential people. They should also wear N-95 or similar masks and follow infection control guidelines.
4. **Cover your mouth and nose**: Always cover your mouth and nose with a tissue when coughing, sneezing, or laughing. Dispose of tissues properly. Wash hands after.
5. **No public spaces**: Avoid going to public places like work, school, shopping centers, bars, restaurants, or places of worship until your health department TB provider clears you.
6. **Follow medical advice**: Take all medications as prescribed. It's critical to follow your treatment plan for the full time (anywhere from 4-6 months, up to 12 months) to cure TB and reduce transmission risk.
7. **Ventilation**: Open windows to ensure good airflow and reduce the number of TB bacteria in the air.

Following the guidelines is essential. If you have trouble following the guidelines, notify your health department TB provider immediately for their medical guidance.

Restrictions During Isolation

1. **Work and School**: You may not return to work or school until your health department TB provider has allowed you to do so.
2. **Travel**: Do not travel on public transportation (buses, planes, etc.) until your health department TB provider has allowed you to do so. If traveling for medical care, arrange private transport and inform the health department in advance.
3. **Contact with Others**: Avoid close contact with anyone, particularly children, elderly individuals, and those with weakened immune systems, as they are more susceptible to infection.

Questions about restrictions during isolation should be directed to your health department TB provider.

How Long Will TB Isolation and Restrictions Last?

Isolation and restrictions are temporary. It may stop once:

- Your health department TB provider reviews the duration of your TB doses and overall status.
- You are showing improvement in your symptoms.
- Other tests, if necessary, are collected and the health department TB provider has reviewed the results.

When TB Isolation and Restrictions End

1. Once your health department TB provider confirms that you may be released from TB isolation and restrictions, you will be allowed to resume normal activities, including returning to work, school, and public spaces. You must wait for their clearance.
2. It's essential to continue taking your medication as prescribed, even after the TB isolation and restriction period ends, to ensure a full recovery and prevent the development of drug-resistant TB.

Support During TB Isolation and Restrictions

Isolation can be challenging, both physically and emotionally. It's important to:

- Keep in touch with family and friends through phone calls, video chats, or messaging.
- Inform your healthcare team if you need any support, including access to mental health services.
- If you need help with groceries or other necessities, ask your support network or healthcare team to assist you during this time.

Key Points to Remember:

- **TB isolation and restrictions are temporary** and essential to prevent the spread of TB.
- **Take your medications as prescribed** for the entire course of treatment.
- **Follow health department rules carefully** to protect others from getting infected.

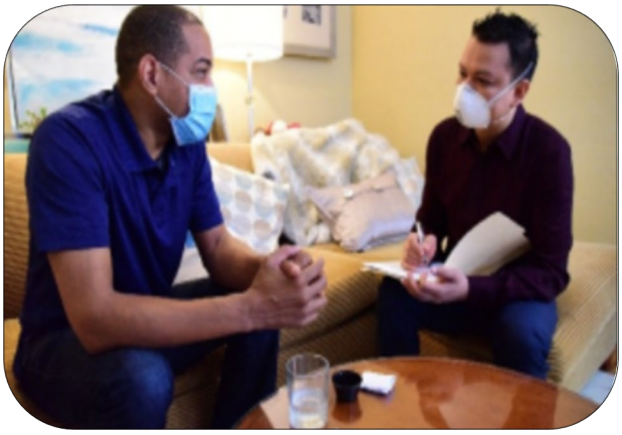
If you have any questions or concerns, don't hesitate to contact your health department TB care team.

Appendix 8: Infection Control Measures

Respiratory Protection Controls

The minimum respiratory protection a health care worker should wear is a filtering facepiece respirator (FFR) to prevent the inhalation of airborne droplet nuclei. The FFR is better known as the N95 respirator. The N95 is for healthcare workers. *Patients should NOT wear the N95 respirator*.

Patients likely to be infectious should wear a surgical mask to prevent expelling droplet nuclei into the air. Patients should wear these masks in the hospital and/or at home. *Surgical masks should be worn by persons with known/suspected TB when others are around. They should NOT be worn by HCP caring for patients with infectious TB.*



The patient with TB *(left)* is wearing a surgical mask. The healthcare worker *(right)* is wearing a filtering facepiece respirator (FFR).

Educate the patient to cover their mouth and nose when coughing or sneezing or to cough/sneeze into their upper sleeve and not their hands.

Place all used tissues in waste basket and wash hands with soap and warm water.

Environmental Controls: Primary and Secondary

Primary Environmental Controls

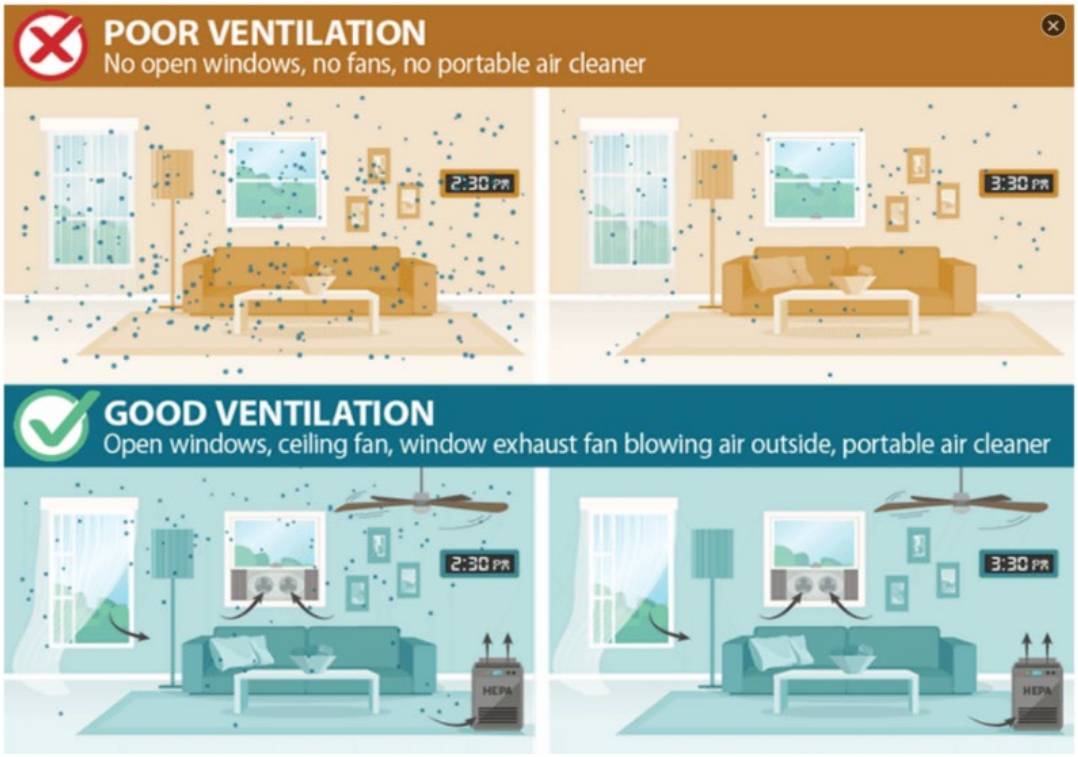
- Focus on controlling the source of infection:
  - Local exhaust ventilation
  - Diluting or removing contaminated air
  - Proper ventilation: Closing doors; keeping windows open (car, work, home, etc.) (see Figure 2).

Secondary Environmental Controls

- Focus on preventing contamination of air to adjacent areas
  - Airborne infection isolation (AII) rooms are designed to prevent the spread of droplet nuclei
  - Cleaning the air using HEPA filters or ultraviolet germicidal irradiation (UVGI)
  - Directional airflow that allows potentailly infected air to move through a space (see Figure 3).

Source: Guidelines for Preventing the transmission of *Mycobacterium tuberculosis* in Health-Care Settings, 2005. **https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5417a1.htm?s_cid=rr5417a1_e**.

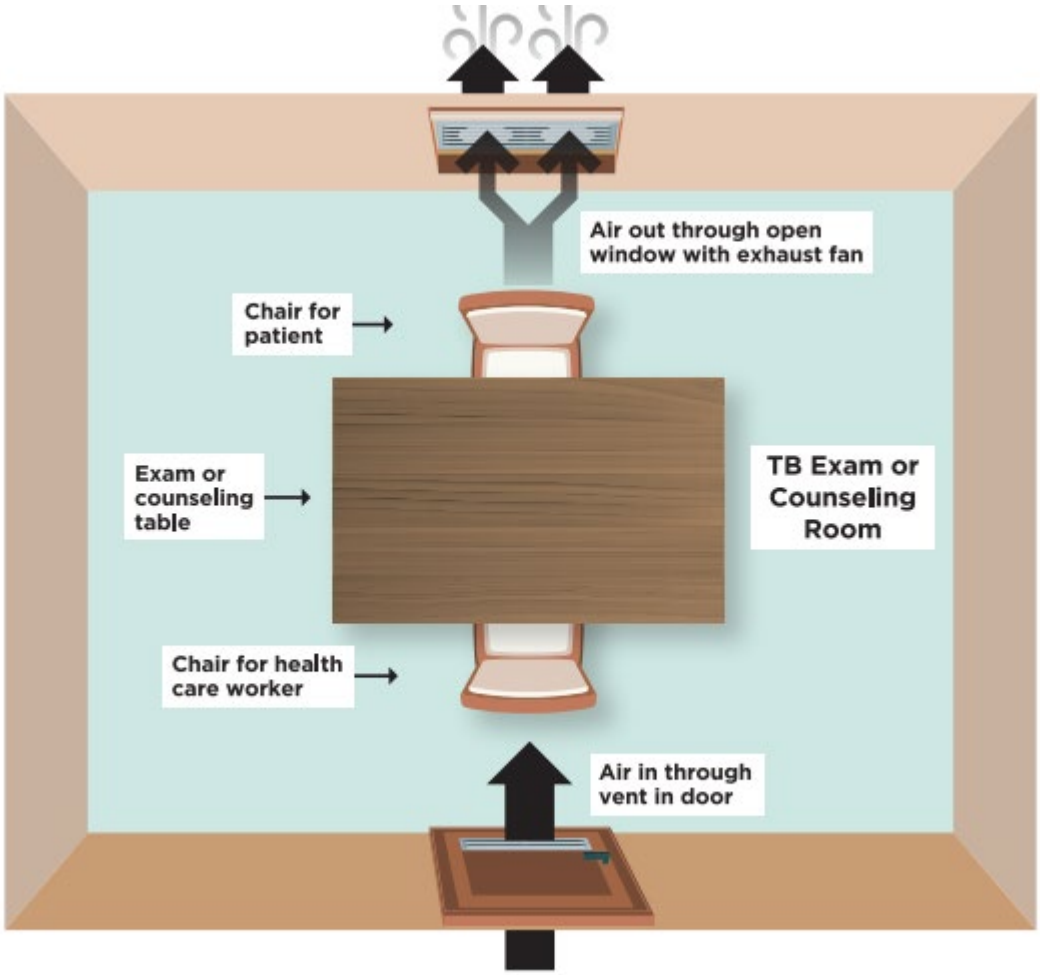
Figure 2: Example of Home Ventilation



This image is an example of poor and good ventilation when isolating the infectious person in the home. Poor ventilation includes open doors to other rooms in the house, no ventilation or air circulation, and windows shut which allow TB droplets to linger. Good ventilation includes having windows open (closing if there is a strong breeze) and air circulation with fans encourages TB droplets to flow out of patient's room

Source: **https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/improving-ventilation-home.html**

Figure 3: Fan-Assisted Natural Ventilation in TB Exam or Counseling Room



This image shows how natural ventilation can be useful in settings that do not have a central ventilation system and how fans can be used to help establish airflow if they are accessible or if there is not a window. If it is unknown how the airflow is moving, the staff should sit near the fresh air source and patients should sit next to the exhaust. This will help protect the staff in addition to environmental measures, cough etiquette education, and respiratory hygiene should continue to be encouraged to further reduce the risk.

Source: **https://www.cdc.gov/tb/media/Core_Curriculum_TB_eBook.pdf**

Sources:

- **Core Curriculum on Tuberculosis: What the Clinician Should Know | Tuberculosis (TB) | CDC**
- **Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Settings, 2005**
- **TB 101 - Infection Control | TB | CDC**
- **Preventing Tuberculosis | Tuberculosis (TB) | CDC**
- **Cover Your Cough Health Care Poster | Flu Resource Center | CDC**

Acknowledgments

These guidelines were developed by a DSHS TB Section-established workgroup comprised of TB subject matter experts from the DSHS TB Section, Heartland National TB Center, local and regional health departments, and DSHS Regional and Local Health Operations. Workgroup members represented multiple disciplines including medicine, nursing, epidemiology, management, field operations, infection control, administration, and local health authority.

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