CDPH/CTCA Joint Guidelines

Guidelines for the Assessment of Tuberculosis Patient Infectiousness and Placement into High and Lower Risk Community Settings

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I. Preface

The following Guidelines have been developed by the California Department of Public Health (CDPH), Center for Infectious Diseases, Tuberculosis Control Branch (TBCB), and the California TB Controllers Association (CTCA). These Guidelines provide statewide recommendations for tuberculosis (TB) control in California. If these Guidelines are altered for local use, then the logo should be removed and adaptation from this source

document acknowledged.

No set of guidelines can cover all situations that can and will arise. When questions arise on individual situations not covered by these guidelines, consult with your local TB Controller or the CDPH, TBCB.

According to California law (H&S Code, Section 121361), patients with confirmed or suspected TB can only be discharged, transferred, or released from health facilities after a written treatment plan is approved by the local health officer. Exceptions include urgent transfers for higher care or to correctional institutions, where notification and a written plan are still required.

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II. Background

One of the cornerstones of TB control is preventing TB transmission and the development of secondary TB cases. TB transmission has been documented in a variety of high-risk settings, including health care facilities (HCFs), skilled nursing facilities (SNFs), correctional institutions, congregate living sites for HIV-infected persons, residential drug treatment facilities, and homeless shelters. This guideline was originally published in 1997 and was entitled *Guidelines for the Placement or Return of TB Patients into High-Risk Housing, Work, Correctional or In-Patient Settings*. The aim was to provide guidance for the safe placement of TB patients into high risk settings in California. The guideline underwent revision in 2009 following work that better defined characteristics associated with ongoing infectiousness after the initiation of appropriate anti-TB therapy and following publication of updated guidelines from the Centers for Disease Control and Prevention (CDC). It was also expanded to include recommendations for the safe placement of TB patients into lower risk settings. The 2017 update reflected shifts in TB epidemiology and available diagnostics. Guidelines continue to be in accordance with recommendations made by the national guidelines published by the CDC addressing patient infectiousness- Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Health-Care Settings (2005),[1–10] Prevention and Control of Tuberculosis in Correctional and Detention Facilities (2006),[11] and Guidelines for the Investigation of Contacts of Persons with Infectious Tuberculosis (2005).[12]

However, in 2024 the National TB Controllers Association (NTCA) published guidelines for respiratory isolation and restrictions (RIR) aimed at reducing TB patient isolation in community settings[13] after a systematic review of published evidence and learning from the Covid-19 pandemic of problems with social isolation. These newer guidelines focus on (1) duration of effective therapy (2) initial features of infectiousness (3) tailoring restrictions to the environment of potential exposure and susceptibility of contacts encountered there, and (4) assessment of impacts of isolation on the individual patient needing to isolate balanced with public health concerns. Additionally, those guidelines define and promote a "moderate" category of restrictions that allow persons with TB to engage in many lower-risk activities in the community using extra precautions to mitigate the impact of isolation on the person with TB while keeping the community safe from TB transmission. Overall, this is consistent with the concept of "entry into lower risk settings" outlined in the CDPH/CTCA 2017 guidelines.

Central to the NTCA guidelines was a review of evidence on infectiousness that, taken together, demonstrated AFB smear status is a poor indicator of infectiousness for patients on effective TB therapy and infectiousness decreases rapidly after initiation of effective treatment in the majority of individuals with TB, including those with high smear grade. In vitro data shows that the early bactericidal activity of 1st line TB treatment shows significant decreases in viable *Mycobacterium tuberculosis* (M. tb) bacilli within a few days of treatment. Similarly, aerosol cough samples from most TB patients become non-culturable after a few days of TB treatment. Guinea pig models have shown that TB treatment reduced transmission by 98% among those exposed to humans on TB treatment versus those who were untreated, and that TST conversion rate was only 1% (n=1) among guinea pigs exposed over 3 months to mostly AFB smear positive humans with MDR-TB on treatment. Human-to-guinea-pig models suggest that TB treatment significantly reduces infectivity within just 48-72 hours, regardless of sputum smear grade. Other data show that after 1 day of TB treatment in humans, there is downregulation in the transcription of genes associated with TB virulence and infectiousness in vitro. Clinical trials have suggested that older, less effective TB regimens were able to prevent secondary TB and LTBI within households after 2 weeks of treatment, even for people with TB and positive sputum smears. Finally, a 1950s randomized trial found no difference in secondary TB or LTBI among household contacts to TB whether the patient returned home for treatment or was treated in a sanatorium, suggesting secondary cases resulted from the TB exposure prior to treatment.

The NTCA review notes that beyond infectiousness of the individual with TB, risk of transmission also depends on factors external to the patient including ventilation within indoor settings, duration of exposure, and vulnerability of contacts. Additionally, the CTCA/CDPH committee's review of this evidence basis noted that these studies were conducted decades ago, mostly in endemic settings, at a time when different drug regimens and treatment practices were used without reported metrics of treatment adherence.

Determining that treatment is likely to be effective is an important component of assessing ongoing infectiousness while on treatment. Since 2017 there have been new diagnostics for early detection of drug resistance for TB. First, availability and use of rapid nucleic acid amplification tests (NAATs) on direct specimens (e.g., Xpert® MTB/RIF, Cepheid) has increased throughout California, allowing for rapid detection of rifampin resistance by many public health and commercial laboratories. Access is increasing to other molecular susceptibility tests including targeted next generation sequencing (tNGS), which can also be performed on direct specimens, and whole genome sequencing (WGS), which predicts resistance to both first and second-line medications for TB.

Evidence suggests that patients with multidrug-resistant TB (MDR TB; M. tb resistant to both isoniazid and rifampin) on effective treatment become non-infectious quickly, and treatment options for both MDR active and latent TB treatment have expanded to shorter, all oral, and less toxic regimens[14]. Programmatic experience in California and recent international study results suggest that there is probable effectiveness of preventing active disease among contacts to MDR TB with LTBI treatment using fluroquinolones[15]. First-line therapy for MDR TB has changed from an 18-24 month injectable-based regimen to 6-9

month all-oral regimens with overall improved efficacy and more tolerable side effect profiles (currently with low rates of drug resistance to these regimens in the United States). On the basis of these changes, more stringent isolation criteria for release from isolation of patients with MDR TB can now be brought into closer alignment with those for presumed drug-susceptible TB. There are no published studies showing efficacy of LTBI regimens for contacts to MDR TB with fluoroquinolone resistance, so more caution might still be considered for these patients.

The following guideline first defines risk-related and pertinent TB-related terms and outlines considerations for determining the risk of *M. tb* transmission. The latter sections provide criteria for infectiousness and placement in high and low risk settings, criteria for discharge or transfer of people with confirmed or suspected TB from health care facilities, and considerations for home isolation. National recommendations for infectiousness criteria within certain settings including healthcare[1] and correctional[11] facilities were published in 2005 and 2006, respectively, and have not been updated to reflect newer molecular diagnostics and highly effective, shorter course treatment regimens. For the purposes of the current guidance, correctional facilities are included in "high risk community settings" while healthcare settings are addressed by facility type, either as "medium risk community settings" or "high risk medical settings" according to section IV below.

III. Objectives

These guidelines have been developed to reduce the risk of TB transmission by:

1. Defining uniform criteria for patient non-infectiousness which should be assessed before release of patients to be in settings in which the risk of transmission and/or secondary TB cases is high.
2. Defining uniform criteria for release of respiratory isolation restrictions (RIR) for patients to be in settings in which the risk of both transmission and secondary TB cases is lower.

IV. Risk Definitions: Settings, Disease Progression, and Drug Resistance

Note on healthcare settings:

Healthcare settings were excluded from consideration in the CTCA/CDPH 2017 guidance and from the NTCA 2024 guidelines. The current 2025 CTCA/CDPH guideline committee (see Appendix for details of the guideline committee) similarly did not focus on making recommendations for healthcare settings. National recommendations for infectiousness and infection prevention in healthcare settings were published in 2005[1]. Those guidelines based determination of infectiousness in large part on sputum smear or culture negativity including after treatment initiation and did not reflect newer molecular diagnostics or more effective short course TB treatment. The current guideline committee modified the 2005 CDC recommendations to account for molecular testing and use of DOT (see Appendix 2 Table 2). When discussing healthcare setting recommendations, the current committee did not come to an agreement on whether the principles of the 2024 NTCA guidelines should be extended to healthcare settings and, if so, to which specific settings they should apply. In making determinations about respiratory isolation in healthcare settings the following principles and considerations should apply:

- Determination of criteria to use in specific healthcare settings should be made by the local TB program
- Many outpatient clinic settings can be considered Medium risk (see below)
- Many inpatient settings such as acute care hospitals and nursing homes should be considered high risk healthcare settings and use the modified 2005 recommendations in Appendix 2
- Other settings such as infusion centers or hemodialysis facilities might be managed according to recommendations for medium risk, high risk, or high risk healthcare settings.

1. High risk setting[a]

A residential or work setting in which others will spend time in the same room with the patient who has TB, and which is characterized by one or more of the following

[a] Evaluation of risk should be done in consultation with the local TB control program

factors:

i. Any settings in which the local health officer is concerned for potential outbreak or risk of extensive transmission

ii. Congregate living settings where sleeping quarters are shared with others (e.g. homeless shelter, correctional facilities, etc.).

iii. Home setting with presence of household members at high risk of progression to active TB disease (see IV.5 below) and not yet on treatment

iv. The presence of persons who have not been previously exposed to the TB patient combined with location factors (e.g., poor ventilation and prolonged contact) that would increase risk of transmission.

2. Medium risk setting[a]

a. Non-high-risk settings that include persons *not previously exposed to TB* and where *exposure is brief*.
   i. Indoor, public, non-high-risk settings (e.g. grocery store, library, pharmacy, local public transportation). *Most public spaces are expected to have adequate ventilation for brief exposures; however, specific locations with particularly poor ventilation (e.g. a community gathering in the basement of a home) might be considered high risk settings.
   ii. Outdoor, crowded events (e.g. wedding, concert, sporting event, rally)
   iii. Outpatient medical settings may be considered to be medium risk, if they have appropriate administrative and environmental controls[16] in place to be able to accommodate a patient with low infectious potential. Consult local TB Program with questions.

b. In these settings, recommend use of well-fitted, good quality mask, ideally provided by the TB program, until cleared by public health

3. Low risk setting[a]

All settings should be considered high risk until an assessment has been done by the local TB control program.

a. A residential setting not characterized as high risk, and:
   i. No other persons will share living spaces (e.g. shared bathroom, kitchen, living or dining rooms) with the TB patient; OR
   ii. Other persons who will share living spaces with the TB patient are not at increased risk for progression to TB disease if infected (see IV.5 below); OR
   iii. All persons at increased risk of progression to TB disease if infected, including all children under the age of five years, who will share living spaces with the TB patient have been previously exposed to the TB patient, have had a complete medical evaluation, and have been started on therapy, including window period treatment for presumed LTBI (TB1),[12] as appropriate.

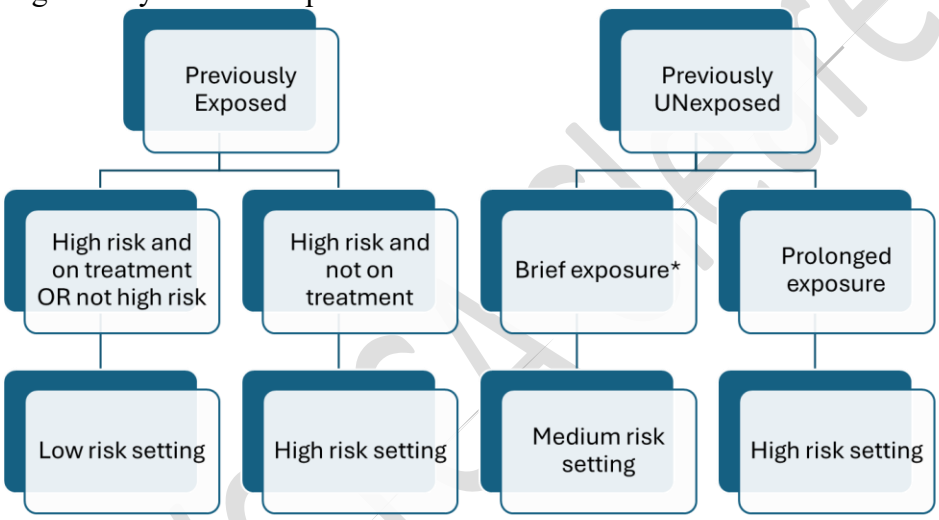
b. A non-residential (e.g. school, work, places of worship, etc.) setting that is not

characterized as high risk based on the criteria (IV.1 above), and in which contacts are presumed to be previously exposed and no contacts are known or reasonably expected to be at increased risk of progression to TB disease if infected.

4. **Very low risk settings**

   Outdoor, uncrowded settings (e.g. hiking trails, public parks, neighborhood sidewalks, beaches) where adequate distance can be maintained from unexposed people, are excluded from isolation. Patients at any point in their treatment can, and should be encouraged, to spend time outdoors for their mental and physical well-being during TB treatment.

Figure 1: Setting Risk by Contact Exposure Status



*Most public spaces are expected to have adequate ventilation for brief exposures; however, specific locations with particularly poor ventilation (e.g. a community gathering in the basement of a home) might be considered high risk settings.

5. **Persons at increased risk of progression to TB disease if infected**[12]

   a. Children < 5 years of age.

   b. Persons with medical conditions associated with an increased risk of progression to active TB disease, including:

      i. HIV infection (including persons at increased risk for HIV infection who have not been tested).
      ii. Diabetes mellitus, especially if insulin dependent or poorly controlled.
      iii. End-stage renal disease.
      iv. Injection drug use, if HIV status unknown.
      v. Cancer of the head and neck.
      vi. Immunosuppressive treatment, including chronic corticosteroids, anti TNF agents (or other immunomodulating agents with known increased TB progression risk), post-transplant therapy and cancer chemotherapy.
      vii. Other diseases characterized by immunosuppression, such as lymphoma or

leukemia.

viii. Intestinal bypass or gastrectomy.
ix. Low body weight (> 10% below ideal body weight).
x. Chronic malabsorption.
xi. Malnutrition and clinical situations associated with rapid weight loss.
xii. Silicosis.

6. **Persons at increased risk of MDR TB**[17]

a. Persons with evidence of resistance mutations to rifampin
b. Contact to an MDR TB case.
c. Current TB treatment with evidence of treatment failure.
d. Prior TB treatment since 1970 (Exception: relapse of disease following completion of adequate therapy by Directly Observed Therapy (DOT) for an episode of pan-susceptible disease).
e. Immigration from or recent extended travel to a country with a high incidence (> 2%) of MDR TB among cases from that country diagnosed in the United States including California.[b] Data on MDR cases by country of origin is provided in Annual TB Reports, California Data Tables available at www.cdph.ca.gov/tbdata.[c]

Persons at increased risk of MDR TB:

- Contact to an MDR TB case.
- Current TB treatment with evidence of treatment failure.
- Prior TB treatment, unless administered via DOT.
- Immigration from, or recent extended travel to, a country with a high incidence of MDR TB.
- Other risk groups identified by the state or local health department.

V. Definition of Terms

1. **Acid Fast Bacilli (AFB) smear negative**: any respiratory specimen which is negative for AFB by microscopic examination.[18,19]

2. **Acid Fast Bacilli (AFB) smear positive**: any respiratory specimen positive for AFB by microscopy.[18, 19]

[b] Current data on the risk of MDR TB in US TB Cases, by Country of Origin, are available in the Survival Guide for Clinicians, 3rd Edition (2022) https://www.currytbcenter.ucsf.edu/sites/default/files/2023-06/SG3_2022_Chapter1_EpiBackground.pdf#drtbus

[c] Current data on California epidemiologic groups at increased risk for MDR-TB are available from the CDPH, TBCB (510-620-3000) (https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/TB-Disease-Data.aspx)

3. **Appropriate TB treatment:** A multi-drug regimen approved by the local health jurisdiction's (LHJ) TB Program to which the patient's TB isolate is expected to be susceptible based on epidemiology and molecular and/or phenotypic drug susceptibility tests (DSTs). For further detail, refer to the most recent CDC TB treatment guidelines for tuberculosis.[15,20,21] A checklist of parameters to help assess appropriateness of regimen can be found in Appendix 3 toolkit.

4. **Clinical Improvement:** observed improvement in clinical parameters (signs, symptoms, laboratory, radiographic or other findings). A checklist for typical parameters to review is included in the toolkit in Appendix 3.

5. **Directly Observed Therapy:** a health care worker or designated individual observes the patient ingesting each dose of their prescribed TB medications to ensure adherence and treatment completion.

6. **Direct genetic test for drug resistance:** direct genetic test for mutations associated with isoniazid (INH) and/or rifamycin (RIF) resistance not based on sequencing (e.g. Cepheid Xpert ® MTB/RIF that is commercially available as a test for rpoB (RIF) mutations).

7. **Extensive (or strict) isolation restrictions:** limits on movement to a designated location, such as a home, where there is minimal risk of new airborne transmission to previously unexposed persons.

8. **Phenotypic Drug susceptibility test (pDST)**: drug susceptibility test in liquid or solid media, i.e. growth-based test.

9. **Moderate isolation restrictions:** restrictions that may limit employment, congregate housing, or social/community activities occurring in crowded and/or poorly ventilated indoor spaces, as well as new exposures to vulnerable populations. Well-fitted, high-quality mask use recommended for brief entry into medium and low-risk settings. Most outdoor activities, where the likelihood of close prolonged exposure to infectious aerosols is low, are permitted.

10. **Molecular Drug susceptibility test (mDST):** sequencing-based methods (e.g. targeted next generation sequencing tNGS or whole genome sequencing WGS) that identify genetic mutations which are associated with pheonotypic resistance.

11. **MDR TB**: confirmed TB disease resistant to INH and RIF based on the results of drug susceptibility testing (DST), or a molecular DST (unless discordant with subsequent phenotypic DST).

12. **Nucleic acid amplification test (NAAT)**: a test that detects, via the amplification of specific nucleic acid sequences, the presence of *M. tuberculosis (M. tb)* complex in clinical specimens. Examples include Cepheid Xpert® MTB/RIF. Some labs use a lab

developed PCR test for *M. tb* complex identification.[22,23]

13. **Positive culture for *M. tb***: liquid or solid media with growth of AFB identified as *M. tb or M. tb complex,* except for the BCG strain of *Mycobacterium bovis.*

14. **Preliminary positive AFB culture**: liquid or solid media with growth of AFB, identification pending.

15. **Respiratory specimen**: sputum, induced sputum, broncho-alveolar lavage, tracheal aspirate, biopsy of tissue from the respiratory tract (not including pleura).

16. **Sputum specimen**[d,25,26,27,28,29,30,31,32]: spontaneous or induced sputum specimen of at least 2 ml (not saliva). Some labs will not accept a specimen less than 5 ml. In some situations, even a scant specimen if it is true sputum should be processed.[24] Good quality specimens should be thick and contain mucoid and mucopurulent material; poor quality specimens are thin and watery.[33]

    Because of the robust data on the value of an induced specimen, we are recommending that at least one of the three specimens should be induced, if sputum induction is available. Full recommendations for the diagnosis of TB have been provided by joint guidelines[34] . Of note, induced sputum can appear more watery than expectorated sputum and still be an acceptable specimen.

VI. General Considerations for Determining the Risk of TB Transmission and the Development of Secondary TB Cases

VII. The following factors should be considered in determining the risk of, and consequences of transmission.

1. **TB infectiousness[10,1,12,35] positively correlates with the following factors:**

[d] For patients unable to produce a spontaneous specimen, sputum induction using hypertonic saline should be performed. Because AFB smear positivity is increased significantly by induction compared with simple expectoration, when available an induced specimen is preferred.[24] If sputum induction is unsuccessful, an alternative method of sampling such as bronchoscopy with post bronchoscopy sputum collection should be considered if clinically warranted. Gastric aspirates can be useful for obtaining cultures, especially in children, but are prone to false positive smears due to acid fast stomach organisms. An induction attempt that does not yield an adequate specimen ("dry" induction) may be considered equivalent to an adequate specimen that is smear and culture negative at the discretion of the TB Controller.

a. Disease in the lungs, airways, or larynx.
b. Presence of cough
c. Presence of a positive AFB smear in the sputum.[e]
d. Extent of infiltration on chest radiograph.
e. Cavitation on chest radiograph.
f. Failure of the patient to cover the mouth and nose when coughing.
g. Inappropriate or short duration of chemotherapy.
h. Non-adherence to chemotherapy.
i. Poor clinical or bacteriologic response to therapy.

For assessing patient infectiousness, sputum specimens may be collected ≥ 8 hours apart. At least one should be early AM, induced, collected by broncho- alveolar lavage, or collected post-bronchoscopy.

2. The probability that exposed persons, if infected, will develop active disease (See IV.5)

3. **The potential for transmission of *M. tb* in the environment**[16,36]

a. Environmental factors which increase the risk of transmission include:

i. Potential of others sharing air with the case (either in the same room or via the building ventilation system). Use of HEPA filtration or ultraviolet germicidal irradiation (UVGI) may reduce the risk.[37–40]
ii. Poor supply of fresh air.[1]
iii. Larger number and higher density of persons in the setting.[36]
iv. Longer duration of time spent in the setting.

b. Transmission of *M.tb* has been documented in a variety of settings. At a minimum, the following types of settings, should be considered high risk:
i. Health care facilities[1]
ii. Correctional facilities[11]
iii. Drug treatment residential facilities[41]
iv. Other congregate living sites, especially sites housing persons at increased risk of progression to TB disease if infected (see IV.5), including homeless shelters,[42] board and care facilities, and residential treatment facilities.[43]
v. Public living accommodation, including single room occupancy hotels,[44] if air is shared in common areas or through the building ventilation system.

4. Drug resistance of the patient's TB isolate

VII. Criteria for Evaluating Placement and Release from Respiratory Isolation and Restrictions in High and Lower Risk Settings

1. The TB clinical and bacteriological status of the patient as well as the environment

[e] Transmission of TB by AFB smear-negative cases prior to treatment can occur and is well-documented.

must be considered when evaluating the risk of transmission of TB to others

2. Results of nucleic acid amplification tests (NAAT) may be used in placement decisions; three specimens should always be collected for AFB smear and culture.

3. Suggested criteria to assist in the decision-making process are delineated in table 1 below. Placement decisions are made at the discretion of the local Health Officer, unless specific exceptions apply.

Table 1. Recommended Criteria for Release from Respiratory Isolation and Restrictions (RIR) Based on Patient Characteristics of Infectiousness in Community Settings after preliminary evaluation for TB (with final review and determination by Local Health Jurisdiction of the community venue into which the patient will be entering)

Patient Clinical Features	Lab Criteria for release from RIR for all settings	Treatment criteria for release from RIR into High Risk Community Settings	Treatment criteria for release from RIR in Low/Medium Risk Community Settings
Low suspicion for TB (TB5 low, alternate diagnosis more likely, no empiric treatment) - Smear neg x3, NAAT neg - Smear pos, NAAT neg x2 (ideally smear and NAAT from same specimen)	AFB smear neg x 3 *OR* AFB smear pos and NAAT neg x2	No minimum days of TB treatment required	No minimum days of TB treatment required
TB known/suspected (TB3 or TB5 high), without MDR risk-factors - Smear neg x3, NAAT neg - Smear neg x3, NAAT pos	No rpoB mutation if NAAT pos	≥ 5 days of appropriate TB treatment by DOT taken and tolerated AND clinical improvement	≥1 dose of appropriate TB treatment taken by DOT and tolerated
TB known/suspected (TB3 or TB5 high) - Smear pos, NAAT pos (NAAT or other molecular testing for rifampin susceptibility must be completed prior to RIR)	No rpoB mutation (if rpoB testing not available, for high-risk settings use Table 2)	≥ 14 days of appropriate TB treatment by DOT taken and tolerated AND clinical improvement	≥ 5 days of appropriate TB treatment by DOT taken and tolerated AND clinical improvement
MDR TB suspected (TB5 high) - Smear neg, NAAT neg, MDR risk factors	1st and 2nd line DSTs requested on any culture growth with WGS DST	≥ 14 days of appropriate TB treatment by DOT taken and tolerated AND clinical improvement	≥ 14 days of appropriate TB treatment by DOT taken and tolerated AND clinical improvement
MDR TB known (TB3) - Smear neg, NAAT positive with rpoB mutation or high probability of rifampin resistance - Smear pos, NAAT positive with rpoB mutation or high probability of rifampin resistance	Molecular resistance testing requested	≥ 14 days of appropriate TB treatment by DOT taken and tolerated AND clinical improvement, no cough AND Molecular or growth-based susceptibility results available	≥ 14 days of appropriate TB treatment by DOT taken and tolerated AND clinical improvement

See section IV for definitions. Abbreviations used: negative (neg) and positive (pos)
TB 3: Any person determined to have active tuberculosis disease
TB 5 high: Any person with high suspicion for tuberculosis disease based on clinical, radiologic, or

laboratory evidence, but in whom the clinical evaluation is incomplete or laboratory results are pending, but concern for TB is high enough that the patient is started on presumptive TB disease treatment.
TB 5 low: Any person with some suspicion for tuberculosis disease based on clinical, radiologic, or laboratory evidence, such that ongoing testing is obtained, but suspicion for TB is low or an alternate diagnosis is preferred and the patient is not started on TB therapy while awaiting final disposition. The committee's overall goal was to balance the potential risks/harms to a patient of isolation against the theoretical community benefits.

VIII. Discharge or Transfer of Patients with Suspected or Known TB from Health Care Facilities

California Health and Safety Code (HSC), Section 121361, requires that a health facility shall discharge or transfer a person known or suspected to have active TB disease *only after notification and a written treatment plan is received and approved* by the local health officer (LHO) of the jurisdiction in which the health facility is located. This authority is often delegated by the LHO to the local TB Controller.

1. The written treatment plan shall include the following elements (HSC Section 121362):

    a. Verified patient address (or address of the receiving facility);

    b. Name and contact information of the medical provider who has specifically agreed to provide medical care;

    c. Clinical information used to assess the patient's infectiousness; and

    d. "Any other information required" by the LHO.

2. When reviewing the written treatment plan, the LHO or designee should take into consideration risk factors for MDR TB, infectiousness of the patient, and the type of setting the patient is entering or returning to using the criteria in section VII to guide decision-making. In addition, before a discharge or transfer can be approved:

    a. Arrangements should be in place for continuation without interruption of an appropriate, prescribed course of TB medication, preferably by DOT;

    b. For patients returning home, a home evaluation, including an in-person home visit, should be completed by the local TB program and documented. All contacts at increased risk of progression to TB disease, if infected (see IV.5), should be medically evaluated for TB and started on appropriate therapy, including window period treatment for presumed LTBI.[12] The patient or guardian must agree to abide by home isolation instructions (see section IX);

    c. The patient's ability to ambulate and perform all activities of daily living should be appropriate for the discharge setting.

    d. Special medical needs (e.g., hemodialysis, cancer treatment), transportation to source of medical care, cooking, shopping, laundry and other issues that might present barriers to adherence with home

isolation, or risk of transmission of TB to previously unexposed persons, especially new contacts at increased risk for progression to TB disease if infected (see IV.5), should be addressed.

IX. Home Isolation

Prior to meeting the criteria for placement as outlined in the above tables, TB patients may be placed in *home isolation*. To be placed in home isolation the following criteria should be met:

1. The patient should have been started on an appropriate multidrug anti-TB treatment regimen;

2. No children <5 years, or persons with HIV or other severely immunocompromising conditions live in the household OR if present, they are on appropriate LTBI treatment or window period treatment for presumed LTBI;

3. All immunocompetent household members have been previously exposed to the patient; and

4. The patient is willing to follow the restrictions imposed by the local TB control program.

Parameters for home isolation need to be clarified with the patient and other residents. This should include conditions for entry of persons into the environment, circumstances where the patient may leave the residence, and precautions within the residence (separate room, etc.). The discussion should also include review of the very low risk settings where the patient can continue normal activities of daily living such as walks outside. Special precautions for attendance at medical appointments should be clarified with the provider seeing the patient and the patient. Patients in home isolation may not work until they meet the criteria appropriate for their work setting. Patients who do not adhere with the conditions of home isolation may be served a public health legal order to remain in home isolation (HSC Section 121365[g]) and may be prosecuted if they violate such an order (HSC Section 120280).

Resources for helping explain isolation restrictions to patients can be found in Appendix 3: Toolkit, sections C and D.

X. References

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X. Acknowledgements

2009

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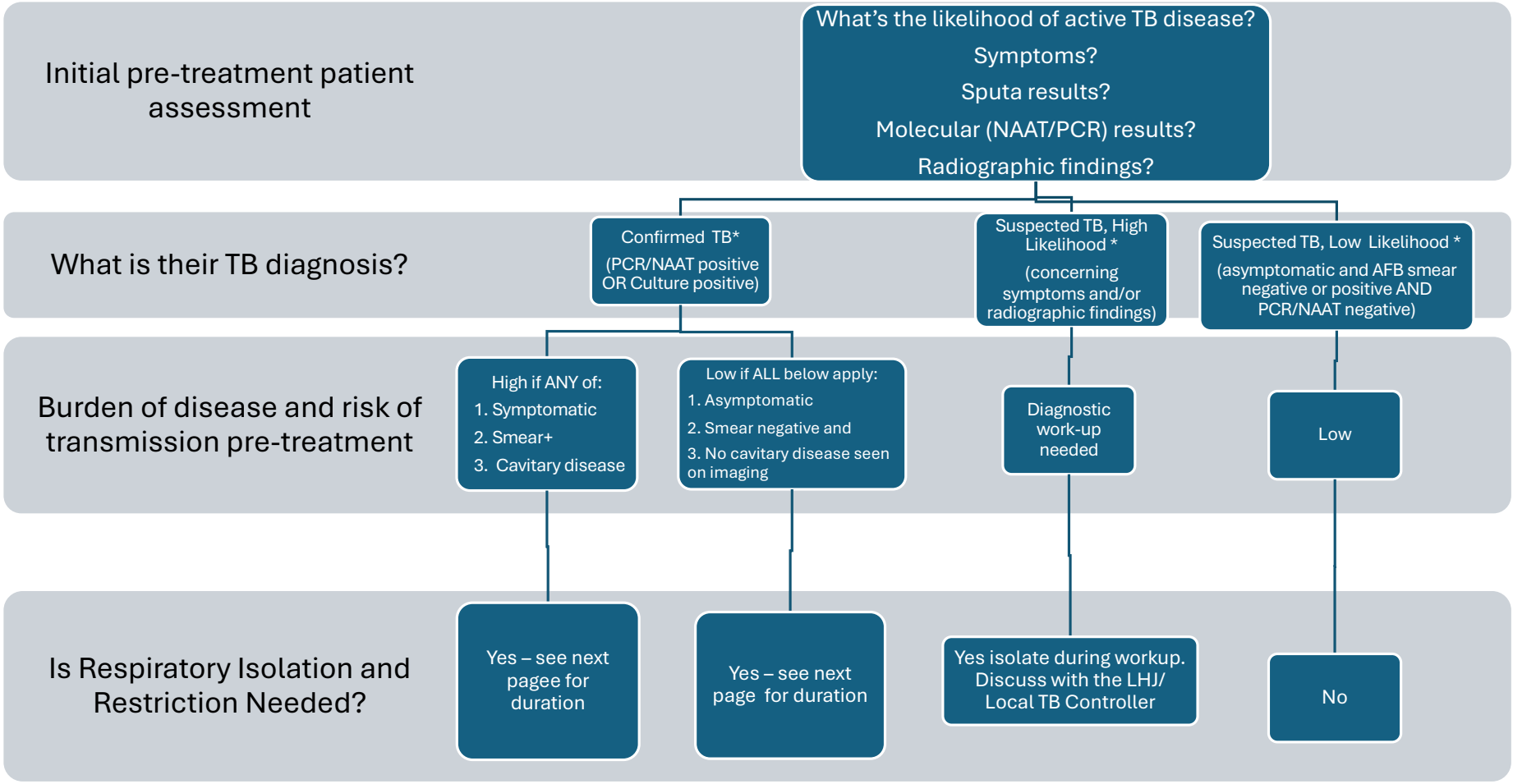
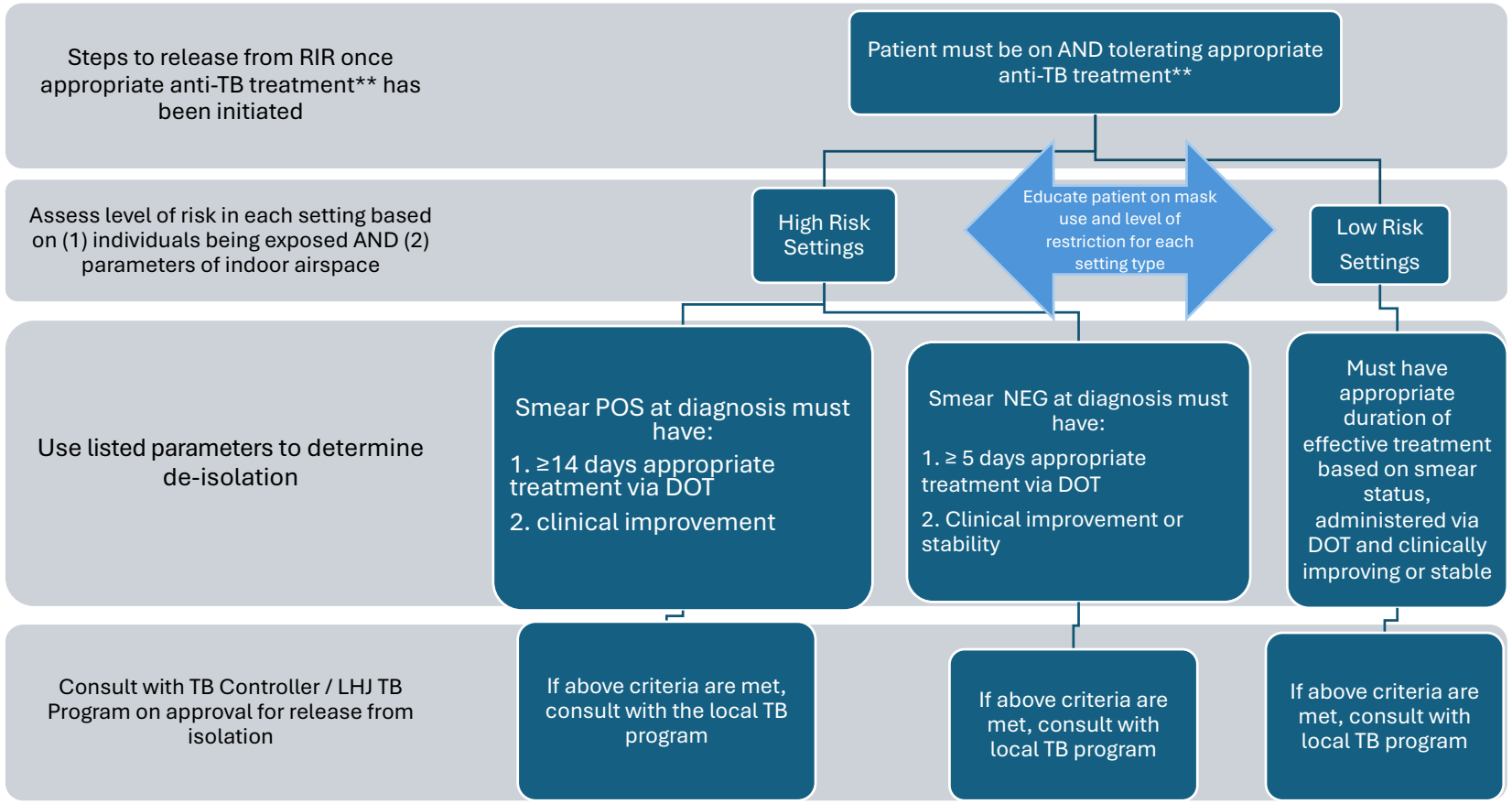
The committee included local TB controllers and CDPH TBCB medical officer with a quorum consisting of representation from each of a high, medium, and low-TB burden local health jurisdictions and a CDPH representative. All individual on the committee had subject matter expertise in tuberculosis treatment, contact investigations, and have experience making decisions concerning TB infectiousness and isolation in California. The committee process included review of previous CTCA/CDPH 2017 guidelines aside the newly published NTCA guidelines to identify differences in current guidance and gaps in the newer NTCA guidance. The NTCA guidance includes a thorough review of the literature regarding infectiousness and was reviewed by the committee in addition to subsequent publications after the NTCA document was published. The committee also considered TB drug resistance patterns in California patients during the previous years since the previous updates and changes in molecular laboratory testing availability in California. Attempts were made to model changes to CA recommendations in the general direction of the NTCA recommendations, with committee consensus regarding scenarios not covered in the new NTCA guidance that had been covered in the previous CTCA/CDPH joint document. All recommendations added to the current guidelines that were different than the NTCA guidelines were made in light of all available evidence and consensus among committee members, and according to review of TB controllers and CDPH staff. Draft guidance was circulated to all CTCA members and to CCLHO for review with incorporation of health officer input.

Appendix 1. TB isolation decision workflow for drug susceptible TB





The bi-directional arrow acknowledges that patients might travel in and out of different risk settings and should be counseled on appropriate mask wearing when transitioning to a high-risk community setting such as for a medical appointment or in an indoor crowded space if they have not met de-isolation criteria for these settings.

Key:
*Confirmed TB = NAAT/PCR or culture positive for TB (also called TB3).
*Suspected TB (high liklihood) = clinical, radiographic, or laboratory findings conerning for TB, but final determination is pending (also called TB5 high).
Note: Medium risk settings fall in the bi-directional arrow

Appendix 2. **CTCA/CDPH recommendations for** application of national guidelines for **inpatient medical care facilities**

Table 2: Recommended Criteria for Release from Respiratory Isolation Restriction (RIR) Based on Patient Characteristics of Infectiousness in Healthcare Settings in 2005 CDC guidance, after preliminary evaluation for TB (with final review and determination by Local Health Jurisdiction in which the healthcare setting is located)

Category	Lab Criteria	Treatment Criteria for RIR release in High Risk Healthcare Settings
Low TB suspicion (TB5 low no empiric treatment, alternate diagnosis more likely) - Smear neg x3, NAAT neg - Smear pos, NAAT neg x2 (ideally same specimen)	AFB smear negative x 3 OR AFB smear positive and NAAT negative x2	No minimum number of days of TB treatment required
TB known/suspected (TB3 or TB5 high, no MDR risk-factors) - Smear negative x3, NAAT negative - Smear negative x3, NAAT positive	No rpoB mutation if NAAT positive AND AFB smear negative x 3	≥ 5 days of appropriate* TB treatment by DOT taken and tolerated AND clinical improvement
TB known/suspected (TB3 or TB5 high) - Smear positive, NAAT positive NAAT or other evidence of molecular susceptibility to rifampin should be completed prior to release from isolation	No rpoB mutation AND AFB smear negative x 3 OR TB culture negative x 2	≥ 14 days of appropriate* TB treatment by DOT taken and tolerated AND clinical improvement
MDR TB suspected (TB5 high) - Smear negative, NAAT negative, MDR risk factors	Molecular resistance testing requested* (if unavailable, while phenotypic DSTs are pending, either criteria for patients with known MDR TB or criteria for patients without increased risk of MDR TB can be applied at TB controller's discretion) AND AFB smear negative x 3	≥ 14 days of appropriate* TB treatment by DOT taken and tolerated AND clinical improvement
MDR TB known (TB3) - Smear neg, NAAT positive with rpoB mutation - Smear pos, NAAT positive with rpoB mutation	Molecular resistance testing requested* AND TB culture negative x 2 AND AFB smear negative x 3 OR if subsequent AFB smear positive, clinical assessment performed and determined to most likely not represent viable M. TB	≥ 14 days of appropriate* TB treatment by DOT taken and tolerated AND clinical improvement

*Molecular testing and use of DOT added by CTCA 2025 for consistency of current practice. See section IV for definitions

Appendix 3. Toolkit

A. **Clinical improvement** checklist. Meeting every criterion is not necessary, these are suggested parameters to consider.
☐ decreased cough
☐ weight gain _____ lbs/kg
☐ If available, repeat radiograph imaging (CXR at 1 month or CXR/chest CT at 2 months) is stable, or ideally improved
☐ If smear positive: AFB smears are improving/decreasing in positivity. Initial smear ____; current smear ____
☐ If culture positive: time to culture positivity is lengthening. M. tb initially grew at ____ days; last grew at ____ days)
☐ other reported or observed improvements:_____

B. **Appropriate TB treatment** checklist
☐ Multi-drug regimen (usually 4 drugs) **approved by local TB program** including at least 2 bactericidal drugs (specify: _____); and
☐ Patient is tolerating stable daily therapy ; and
☐ If available, DST or molecular testing (such as WGS, tNGS) shows no evidence of resistance to medications in regimen; and
☐ If performed, drug level testing shows within therapeutic range

C. **Patient instructions: Isolation to protect others from TB – moderate restrictions explained (6th grade reading level)**

Isolation to protect others from TB:

The TB Program recommends that you stay in isolation for a period of time to protect your family, friends, and others in the community.

TB Program staff will let you know when you can stop wearing a mask and resume normal activities. You'll need to follow these isolation guidelines until then.

Isolation level recommended: Moderate

Things to Do ("DO's") while on moderate isolation:
- Stay at home as much as possible and try to stay in a separate room from others. If that's not possible, wear a mask.
- Open windows and doors to improve ventilation.
- You can go outdoors without a mask if no one's around.
- Cover your mouth and nose with a tissue when you cough or sneeze and throw each tissue away after using it.
- You may go to work or school, or public indoor places such as a grocery store if you are wearing a mask covering your nose and mouth.
- Children under 5 may only stay with you if they've been checked by a doctor and are taking medicine to prevent TB.

Things Not to Do ("DON'Ts")
- Do not visit with people who do not live with you or provide care.
- Do not use long-distance public transportation like buses between cities, trains, or airplanes.
- Do not visit or provide care for babies, young children, or people with weakened immune systems.

D. Patient instructions: Isolation to protect others from TB – extensive restrictions explained (6th grade reading level)

Isolation to protect others from TB:

The TB Program recommends that you stay in isolation for a period of time to protect your family, friends, and others in the community.

TB Program staff will let you know when you can stop wearing a mask and resume normal activities. You'll need to follow these isolation guidelines until then.

Isolation level recommended: Extensive

Things to Do ("DO's") while on extensive isolation:

- Stay at home as much as possible and try to stay in a separate room from others. If that's not possible, wear a mask.
- Open windows and doors to improve ventilation.
- You can go outdoors without a mask if no one's around.
- Cover your mouth and nose with a tissue when you cough or sneeze and throw each tissue away after using it.
- Children under 5 may only stay with you if they've been checked by a doctor and are taking medicine to prevent TB.

Things Not to Do ("DON'Ts")

- Do not go to work or school, or public indoor places such as a grocery store or church.
- Do not visit with people who do not live with you or provide care.
- Do not use public transportation like buses, trains, or airplanes.
- Do not visit or provide care for babies, young children, or people with weakened immune systems.

E. Re-isolation considerations: Given earlier release from isolation for the majority of patients, re-isolation should be considered in the following situations:

- Prolonged interruption of effective multidrug treatment (see CDC treatment interruption guidelines; typically, ≥2 weeks during initiation phase or ≥30 days during consolidation)
- Suspicion of treatment failure or disease progression
- Newly identified drug resistance to medications in the patient's regimen