

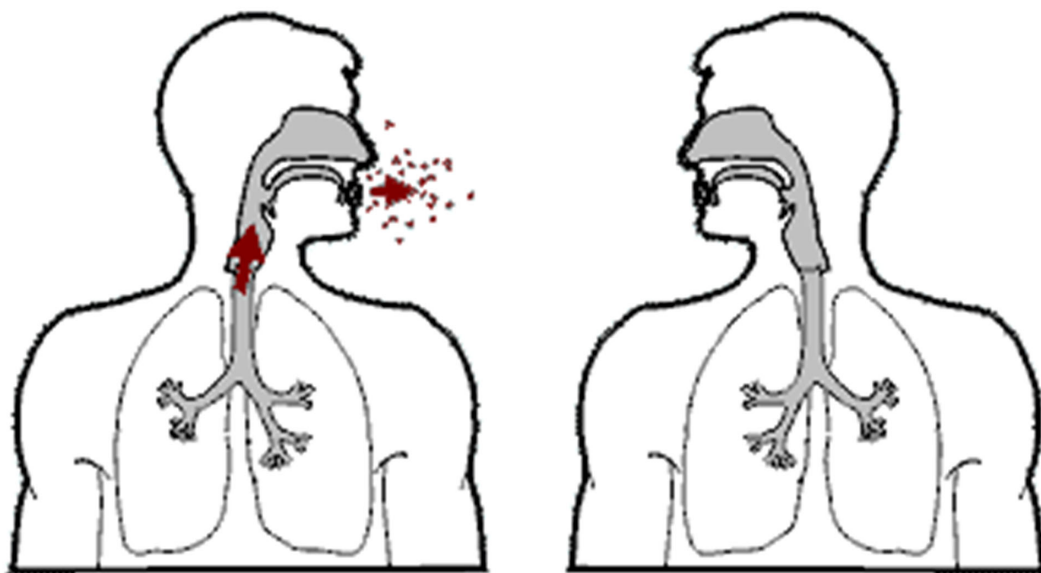
TB CONTROL IN HEALTHCARE FACILITIES: A PRACTICAL GUIDE FOR PREVENTION

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HOW TB IS SPREAD

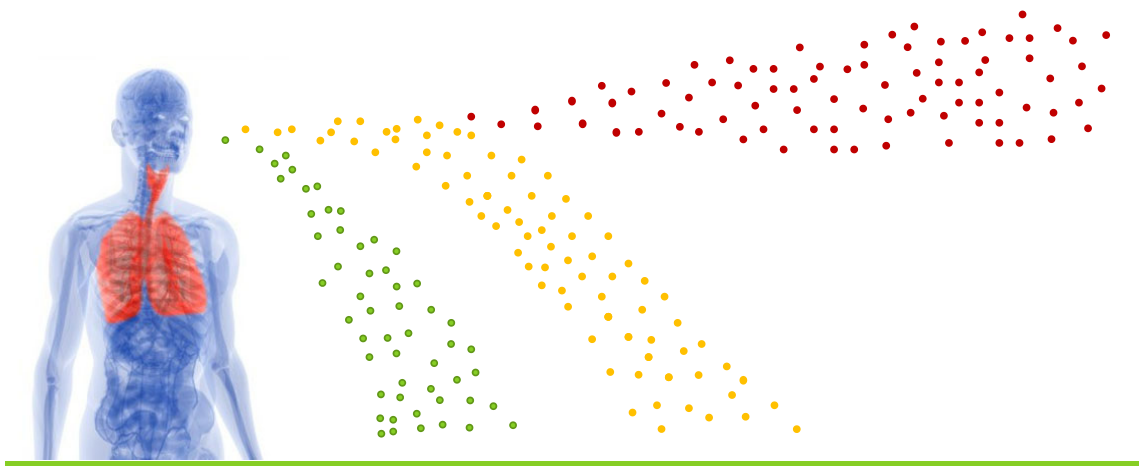


GENERATION OF TB DROPLET NUCLEI

- ▶ One cough produces 500 droplets
- ▶ Average TB patient generates 75,000 droplets/day (before therapy)
- ▶ Each droplet carries 3-10 bacilli
- ▶ Infectious Dose (ID_{50}) <10 bacilli



DROPLET FATE



FACTORS DETERMINING TRANSMISSION

FACTOR	DESCRIPTION
▶ Susceptibility	▶ Immune status of the exposed individual
▶ Infectiousness	▶ Directly related to number of bacilli expelled into the air. Individuals who expel many bacilli are more infectious than those that expel few or no bacilli.
▶ Environment	▶ Factors that affect the concentration of bacilli in the air (ventilation, circulation, air pressure, etc)
▶ Exposure	▶ Proximity, frequency and duration of exposure



PATIENT CHARACTERISTICS ASSOCIATED WITH INFECTIOUSNESS

<u>Factor</u>	<u>Description</u>
Clinical	• Persistent cough > 3 weeks • Respiratory tract disease, especially laryngeal disease (highly infectious) • Failure to cover cough/sneeze • Inadequate/Inappropriate treatment
Procedure	Undergoing cough-inducing or aerosol-generating procedure (e.g., bronchoscopy, sputum induction)
Radiographic and Laboratory	• Cavitation on CXR • Positive culture Mtb • Postive AFB smear



ENVIRONMENTAL FACTORS - INCREASE TRANSMISSION

Factor

Description

Concentration of droplet nuclei The more droplet nuclei in the air, the more probable that Mtb will be transmitted

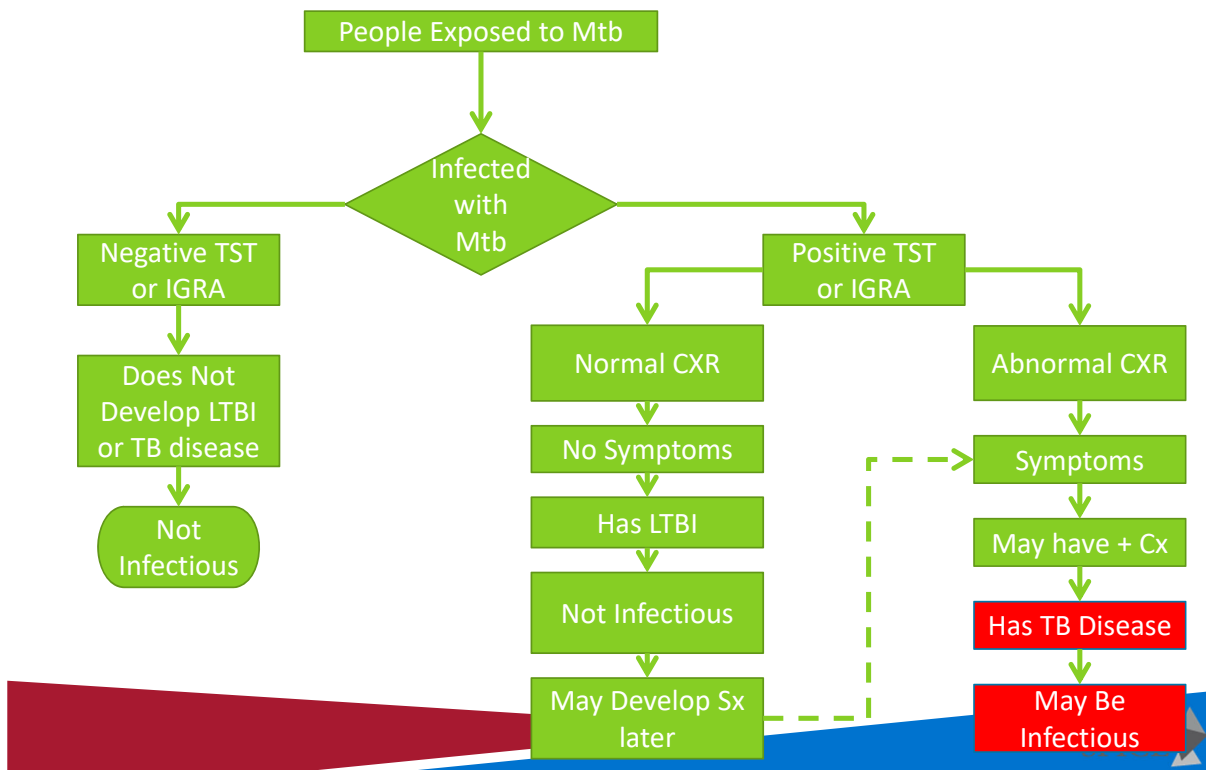
Space Exposure in small, enclosed spaces

Air Circulation Recirculation of air containing droplet nuclei

Air Pressure Positive air pressure in infected patients room causes droplet nuclei to flow to other areas

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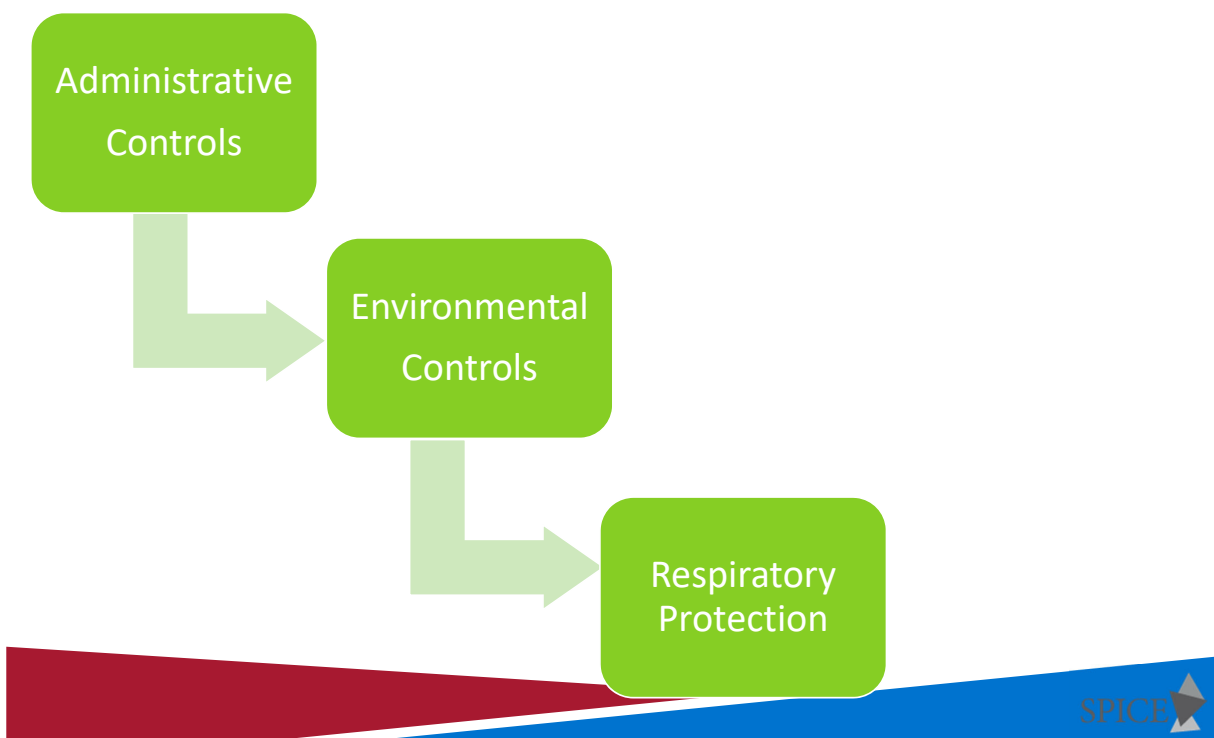
PROGRESSION OF TB



INFECTION CONTROL FUNDAMENTALS



HIERARCHY OF INFECTION CONTROL



TB INFECTION CONTROLS - SIMPLIFIED

Administrative – WHO?

- ▶ Who is a suspect TB patient?
- ▶ Who is at risk from exposure?
- ▶ Who has infectious TB?

Environmental – WHERE?

- ▶ Where is the optimal place to minimize risk?

Personal Respiratory Protection – HOW?

- ▶ How can the worker minimize risk of exposure?



ADMINISTRATIVE CONTROLS

- ▶ Assign responsibility for TB IC Plan
- ▶ Conduct TB risk assessment
- ▶ Develop written TB IC Plan
- ▶ Provide TB screening for HCPs
- ▶ Train HCPs about TB IC
- ▶ Use appropriate signage
- ▶ Train about Respiratory hygiene and cough etiquette

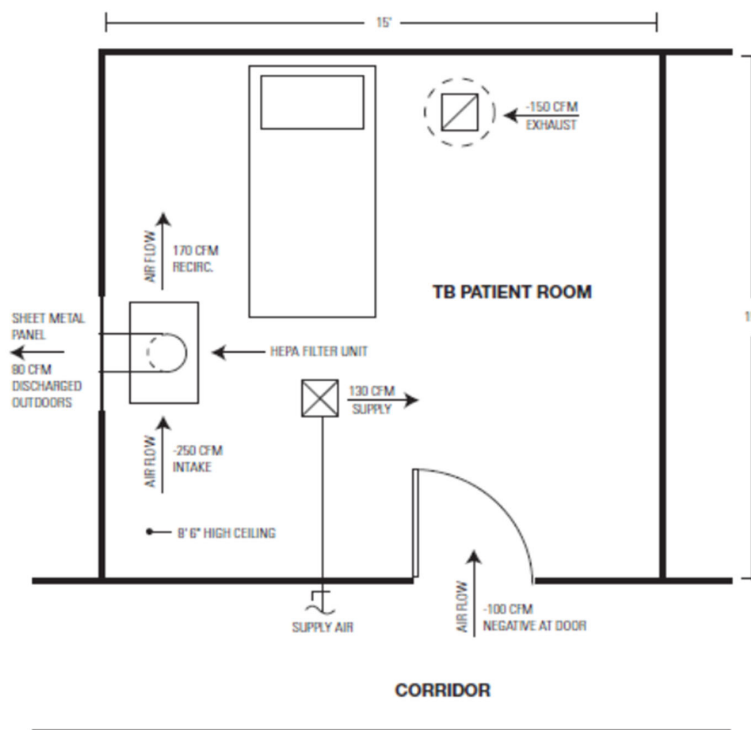


ENVIRONMENTAL CONTROLS

- ▶ Control source of infection
- ▶ Dilute and remove contaminated air
- ▶ Control Airflow and Pressure
 - ▶ Keep infectious air moving outside
 - ▶ Keep HCPs “upwind” and infectious patients “downwind”



AIRBORNE INFECTIOUS ISOLATION ROOM (AIIR)



Negative Pressure

Clean air flows from corridor into AIIR room

Air cannot escape AIIR room

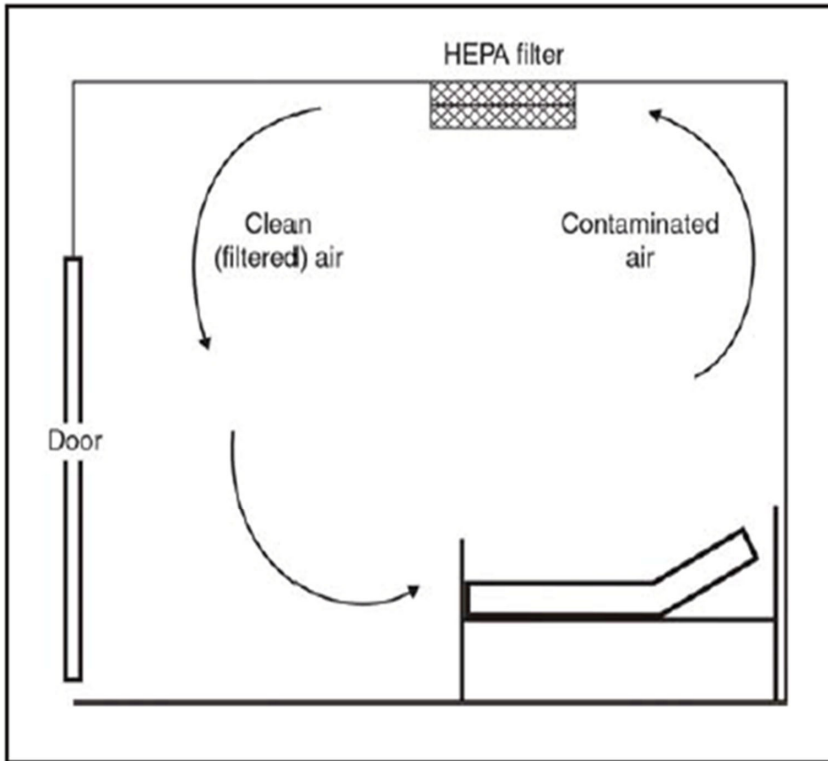
Air is exhausted outdoors

Technical Requirements:

- 6-12 Air Changes/hr
- Must be constantly monitored for negative pressure
- Exhaust grills located above bed



HEPA Filters



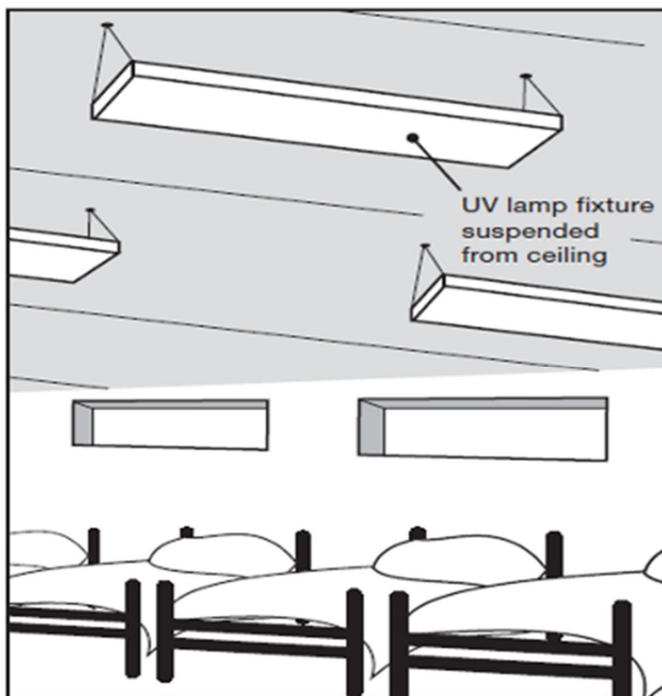
Remove droplet nuclei from air

Must be used with releasing air from:

- Local exhaust ventilation booth to surrounding areas
- All rooms to general ventilation system

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UVGI



- ▶ Air cleaning technology that consist of UV lamps, which kill TB bacilli
- ▶ Should be used with other measures
- ▶ UV light can be harmful to skin and eyes

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RESPIRATORY PROTECTION STANDARD

1910.134(a)(2)

- ▶ A respirator shall be provided to each employee when such equipment is necessary to protect the health of such employee. The employer shall provide the respirators which are applicable and suitable for the purpose intended. The employer shall be responsible for the establishment and maintenance of a respiratory protection program, which shall include the requirements outlined in paragraph (c) of this section. The program shall cover each employee required by this section to use a respirator.

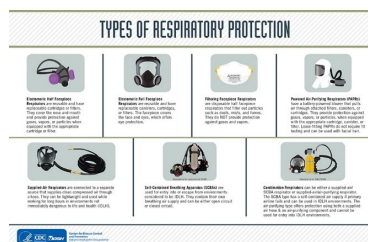


<https://www.cdc.gov/niosh/topics/respirators/default.html>

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KEY ELEMENTS OF A RESPIRATORY PROTECTION PROGRAM (RPP)

- ▶ Assign a suitably trained program administrator
 - ▶ Infection Preventionist
 - ▶ Nurse Administrator
 - ▶ Consult with a local industrial hygiene consulting service
- ▶ Implement and maintain a written RPP
 - ▶ Medical evaluation-Physician or other licensed health care professional (PLHCP)
 - ▶ Fit testing
 - ▶ Training
 - ▶ Maintenance



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MEDICAL EVALUATION

1910.134(E)(1)

- ▶ The employer shall provide a medical evaluation to determine the employee's ability to use a respirator, before the employee is fit tested or required to use the respirator in the workplace. The employer may discontinue an employee's medical evaluations when the employee is no longer required to use a respirator.
 - ▶ Physician or other licensed health care professional (PLHCP)
 - ▶ Perform medical evaluations using a medical questionnaire or an initial medical exam that contains the same information
 - ▶ Follow –up exam for employees providing a positive response (include test, consultations or diagnostic procedures)
 - ▶ Administered confidentially:
 - ▶ During employee's normal work hours,
 - ▶ At a time and place convenient to the employee and
 - ▶ Administered in a manner that ensures the employee understands content
 - ▶ Employee provided the opportunity to discuss with the PLHCP.



SUPPLEMENTAL INFORMATION TO PLHCP

1910.134(E)(5)

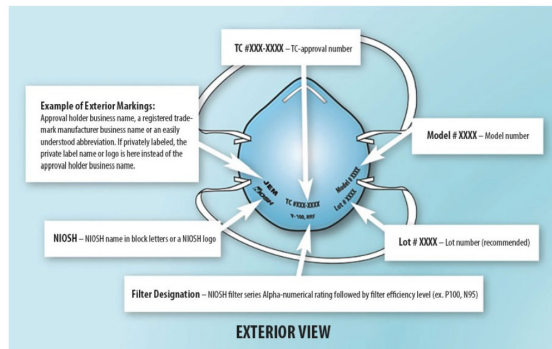
- ▶ The following information must be provided to the PLHCP before the PLHCP makes a recommendation concerning an employee's ability to use a respirator:
 - ▶ The type and weight of the respirator
 - ▶ The duration and frequency
 - ▶ The expected physical work effort
 - ▶ Additional protective clothing and equipment to be worn and
 - ▶ Temperature and humidity extremes that may be encountered
 - ▶ Copy of the respiratory protection program and a copy of this section
- ▶ Employer shall:
 - ▶ Obtain a written recommendation from the PLHCP
 - ▶ Any limitations on respirator use, any needed medical follow up and a statement that the employee has been provided a copy



SELECTION OF RESPIRATORS

1910.134(D)

Sample of a generic filtering facepiece respirator with appropriate markings.



- ▶ The employer shall select and provide an appropriate respirator based on the respiratory hazard(s) to which the worker is exposed
- ▶ The employer shall select a NIOSH-certified respirator
- ▶ The employer shall select respirators from enough models and sizes

https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/default.html



FIT TESTING

1910.134(F)

- ▶ Before an employee may be required to use any respirator with a negative or positive pressure tight-fitting facepiece, the employee must be fit tested with the same make, model, style, and size of respirator that will be used.
 - ▶ Pass an appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT)
 - ▶ Fit tested prior to initial use, whenever a different respirator is used, and at least annually
 - ▶ Whenever changes in the employee's physical condition that could impact fit occur-dental changes, cosmetic surgery or obvious change in body weight



FIT TESTING

1910.134(F)

- ▶ Cannot be worn by employees who have:

- ▶ Facial hair that comes between the sealing surface of the facepiece and the face
- ▶ Any condition that interferes with seal
- ▶ Other PPE will not interfere with seal
- ▶ A user seal check is performed each time they put on the respirator



USER SEAL CHECK



User seal check is not a fit test. The user seal check is one step an employee must take before any fit testing is performed and before the employee uses the respirator in the workplace.



FIT TESTING

QUALITATIVE FIT TESTING

- ▶ Qualitative fit testing is a non-numeric pass/fail test that relies on the respirator wearer's response to a substance ("test agent") used in the test to determine respirator fit.
- ▶ Performs a user seal check-enclosed area-test agent used:
 - ▶ Banana oil (Isoamyl acetate)
 - ▶ Saccharin
 - ▶ Bitrex
 - ▶ Irritant smoke (no enclosure)

QUANTITATIVE FIT TESTING

- ▶ Quantitative fit testing is a method of measuring the amount of leakage into a respirator. A numeric assessment of how well a respirator fits a particular individual.
- ▶ Performs a user seal check
- ▶ Connected to a machine that measures the leakage:
 - ▶ Non-toxic aerosol
 - ▶ Ambient air particles
 - ▶ Controlled negative pressure

TEMPORARY ENFORCEMENT GUIDANCE

- ▶ It is important for employers to understand that deviations from normal respirator use come with increased risk for workers that, in certain circumstances, may only be allowable during this public health emergency because the alternative of no respiratory protection presents a greater danger to workers.
- ▶ In order to ensure adequate protection for workers during the use of contingency and crisis strategies, OSHA has issued temporary enforcement guidance to its Compliance Safety and Health Officers (CSHOs).
- ▶ This guidance allows CSHOs to exercise enforcement discretion in cases involving workplace exposures and an employer that is unable to comply with certain provisions of the Respiratory Protection standard because of supply shortages and has thus found it necessary to implement contingency or crisis strategies for respirator use by workers.

TEMPORARY ENFORCEMENT GUIDANCE ON RP FIT-TESTING FOR N95 FILTERING FACEPIECES (FF)

- ▶ This memorandum expands temporary enforcement guidance provided in OSHA's March 14, 2020, memorandum to Compliance Safety and Health Officers for enforcing annual fit-testing requirements of the Respiratory Protection standard, 29 CFR § 1910.134(f)(2), with regard to supply shortages of N95s or other filtering facepiece respirators (FFRs) due to the coronavirus disease 2019 (COVID-19) pandemic
- ▶ During this COVID-19 pandemic, OSHA field offices should exercise additional enforcement discretion regarding compliance with 29 CFR § 1910.134(f) when an employer switches to an equivalent-fitting make/model/size/style N95 or other filtering facepiece respirator without first performing an initial quantitative or qualitative fit test.
- ▶ Where the use of respiratory protection is required and an employer fails to comply with any other requirements, such as initial fit testing, maintenance, care, and training in the Respiratory Protection standard, cite the applicable section(s) of 29 CFR § 1910.134.



TRAINING 1910.134(K)

- ▶ This paragraph requires the employer to provide effective training to employees who are required to use respirators.
- ▶ The training must be comprehensive, understandable, and recur annually, and more often if necessary.
- ▶ This paragraph also requires the employer to provide the basic information on respirators in Appendix D of this section to employees who wear respirators when not required by this section or by the employer to do so (voluntary use)



KEY ELEMENTS OF A RESPIRATORY PROTECTION PROGRAM

- ▶ Provide effective training
 - ▶ Why it is necessary
 - ▶ Limitations
 - ▶ How to inspect, put on and remove
 - ▶ How to recognize medical signs and symptoms that may limit effective use
 - ▶ Prior to use
 - ▶ Annually
- ▶ Conduct periodic evaluations
 - ▶ Solicit input from staff



KEY ELEMENTS OF A RESPIRATORY PROTECTION PROGRAM (RPP)

- ▶ Assign a suitably trained program administrator
 - ▶ Infection Preventionist
 - ▶ Nurse Administrator
 - ▶ Consult with a local industrial hygiene consulting service
- ▶ Implement and maintain a written RPP
 - ▶ Medical evaluation
 - ▶ Fit testing
 - ▶ Training
 - ▶ Maintenance
- ▶ Conduct a risk assessment
 - ▶ Identify workers at risk



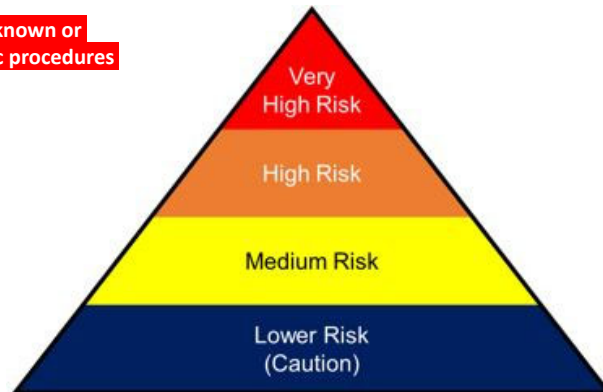
CLASSIFYING RISK OF WORKER EXPOSURE TO SARS-CoV-2

Jobs with a very high potential for exposure to known or suspected sources of SARS-CoV-2 during specific procedures (AGP for example)

Jobs with high potential for exposure to known or suspected sources of SARS-CoV-2

Jobs that require either frequent close contact or sustained close contact with other people in areas with community

Do not require close contact with other people (working remotely)



<https://www.osha.gov/coronavirus/hazards>



WHEN A RESPIRATOR IS NOT REQUIRED

1910.134(C)(2)

- ▶ An employer may provide respirators at the request of employees or permit employees to use their own respirators, if the employer determines that such respirator use will not in itself create a hazard. If the employer determines that any voluntary respirator use is permissible, the employer shall provide the respirator users with the information contained in Appendix D to this section ("Information for Employees Using Respirators When Not Required Under the Standard"); and
- ▶ In addition, the employer must establish and implement those elements of a written respiratory protection program necessary to ensure that any employee using a respirator voluntarily is medically able to use that respirator, and that the respirator is cleaned, stored, and maintained so that its use does not present a health hazard to the user.



[HTTPS://COVID19.NCDHHS.GOV/MEDIA/1442/DOCUMENTS/20210215-VOLUNTARY-USE-OF-FILTERING-FACEPIECE-RESPIRATOR-FFR-IE-N95-OR-SIMILAR-RESPIRATOR.pdf](https://COVID19.NCDHHS.GOV/MEDIA/1442/DOCUMENTS/20210215-VOLUNTARY-USE-OF-FILTERING-FACEPIECE-RESPIRATOR-FFR-IE-N95-OR-SIMILAR-RESPIRATOR.pdf)



NC DEPARTMENT OF
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Voluntary Use of Filtering Facepiece Respirator (FFR, ie N95 or similar respirator) (February 15, 2021)

It is acceptable to wear a N95 in healthcare settings (including congregate care settings) where a fit test cannot be achieved but **where the use of a surgical face mask would otherwise be acceptable or appropriate**. This would be considered equivalent to "voluntary use" of a filtering facepiece respirator (FFR). Employees wearing a N95 under voluntary use should adhere OSHA 1910.134 Appendix D.

In addition, the employer must establish and implement those elements of a written respiratory protection program necessary to ensure that any employee using a respirator voluntarily is medically able to use that respirator, and that the respirator is cleaned, stored, and maintained so that its use does not present a health hazard to the user. Exception: Employers are not required to include in a written respiratory protection program those employees whose only use of respirators involves the voluntary use of filtering facepieces (dust masks).

Appendix D to Sec. 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard



OTHER ELEMENTS

- ▶ Program evaluation
- ▶ Recordkeeping
 - ▶ Medical Evaluation
 - ▶ Records of medical evaluations must be retained and made available in accordance with 29 CFR 1910.1020
 - ▶ Fit testing
 - ▶ Name or identification of the employee
 - ▶ Type of test performed
 - ▶ Specific make, model, style and size of respirator tested
 - ▶ Date of test
 - ▶ Pass/fail results of fit testing
 - ▶ Retain until the next fit test is administered
 - ▶ A written copy of the current respirator program shall be retained by the employer



NCDHHS **Epidemiology** **North Carolina Public Health**

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Communicable Disease HOME

A-Z Diseases & Topics

Tuberculosis

NC Tuberculosis Policy Manual

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TB Info for Individuals & Families

Communicable Disease > A-Z Diseases & Topics > Tuberculosis > N.C. TB Policy Manual

Diseases & Topics

Tuberculosis

North Carolina Tuberculosis Policy Manual

Memos

- [Changes to the TB Policy Manual](#), July 21, 2017 (197 KB PDF)
- [Changes to the TB Policy Manual](#), May 23, 2016 (89 KB PDF)
- [Changes to the TB Policy Manual](#), June 10, 2015 (58 KB PDF)
- [Changes to the TB Policy Manual](#), June 4, 2014 (57 KB PDF)
- [Changes to the TB Policy Manual](#), January 2, 2014 (123 KB PDF)
- [Tuberculosis Shortcourse - Update and Temporary Measures](#), April 24, 2013 (PDF)
- [Changes to the TB Policy Manual](#), February 20, 2013 (124 KB PDF)

Chapter	Title	File Size	Pages
	Table of Contents	148 KB	8
Chapter I	Introduction	87 KB	2
Chapter II	Mantoux Tuberculin Skin Testing (TST) and Interferon Gamma Release Assays (IGRAs)	512 KB	19
Chapter III	Targeted Testing and Treatment of Latent Tuberculosis Infection (LTBI)	364 KB	24
Chapter IV	Diagnosis and Treatment of TB Disease in HIV-Negative Individuals	606 KB	45
Chapter V	TB and HIV/AIDS	226 KB	9
Chapter VI	TB Drugs	117 KB	7
Chapter VII	Contact Investigation	346 KB	11
Chapter VIII	Infection Control	383 KB	13
Chapter IX	Selected Resources	1.4 MB	56
Chapter X	Record Management	44 KB	4
Chapter XI	TB-Related Laws	454 KB	42

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Updated: May 23, 2018

TB **RISK ASSESSMENT**

<http://epi.publichealth.nc.gov/cd/lhds/manuals/tb/toc.html>



TB RISK ASSESSMENT **SETTINGS EXPECTING TO ENCOUNTER TB PATIENTS**

- ▶ Review Community TB profile
- ▶ Review number of TB patients encountered
- ▶ Determine which HCPs to include in both TB screening and RP program
- ▶ Assess the number of AIIR needed
- ▶ Determine types of environmental controls needed



TB RISK ASSESSMENT

- ▶ Reviewing number of cases
 - ▶ National → State → County → Facility
- ▶ Determining your risk classification
 - ▶ Low
 - ▶ No TB cases; <200 beds & < 3 active TB cases; >200 beds & <6 active TB cases-
 - ▶ Persons with TB disease not expected to be encountered; exposure unlikely
 - ▶ Medium
 - ▶ <200 beds & > 3 active TB cases; >200 beds & > 6 active TB cases
 - ▶ HCP will or might be exposed to persons with TB disease
 - ▶ Potential Ongoing Transmission
 - ▶ Evidence of ongoing transmission in facility

No longer used to determine frequency that HCP should be tested



TB SCREENING, TESTING AND TREATMENT OF U.S. HEALTH CARE PERSONNEL (CDC RECOMMENDATIONS 2019)

- ▶ Since 1991 U.S. TB rates declined
- ▶ Serial TB testing has limitations in populations at low risk
- ▶ Recommendations for HCP screening, testing, treatment and education updated
- ▶ Other recommendations, i.e., facility risk assessments for guiding IC policies and procedures unchanged.



Category	2005 Recommendation	2019 Recommendation
Baseline (preplacement) screening and testing	TB screening of all HCP, including a symptom evaluation and test (IGRA or TST) for those without documented prior TB disease or LTBI.	TB screening of all HCP, including a symptom evaluation and test (IGRA or TST) for those without documented prior TB disease or LTBI (unchanged) ; individual TB risk assessment (new) .
Postexposure screening and testing	Symptom evaluation for all HCP when an exposure is recognized. For HCP with a baseline negative TB test and no prior TB disease or LTBI, perform a test (IGRA or TST) when the exposure is identified. If that test is negative, do another test 8–10 weeks after the last exposure.	Symptom evaluation for all HCP when an exposure is recognized. For HCP with a baseline negative TB test and no prior TB disease or LTBI, perform a test (IGRA or TST) when the exposure is identified. If that test is negative, do another test 8–10 weeks after the last exposure (unchanged) .
Serial screening and testing for HCP without LTBI	According to health care facility and setting risk assessment. Not recommended for HCP working in low-risk health care settings. Recommended for HCP working in medium-risk health care settings and settings with potential ongoing transmission.	Not routinely recommended (new) ; can consider for selected HCP groups (unchanged) ; recommend annual TB education for all HCP (unchanged) , including information about TB exposure risks for all HCP (new emphasis) .
Evaluation and treatment of positive test	Referral to determine whether LTBI treatment is indicated.	Treatment is encouraged for all HCP with untreated LTBI, unless medically contraindicated (new) .



BOX. Indicators of risk* for tuberculosis (TB) at baseline health care personnel assessment†



Health care personnel should be considered to be at increased risk for TB if they answer “yes” to any of the following statements.

1. Temporary or permanent residence (for ≥1 month) in a country with a high TB rate (i.e., any country other than Australia, Canada, New Zealand, the United States, and those in western or northern Europe)

Or

2. Current or planned immunosuppression, including human immunodeficiency virus infection, receipt of an organ transplant, treatment with a TNF-alpha antagonist (e.g., infliximab, etanercept, or other), chronic steroids (equivalent of prednisone ≥15 mg/day for ≥1 month), or other immunosuppressive medication

Or

3. Close contact with someone who has had infectious TB disease since the last TB test

Abbreviation: TNF = tumor necrosis factor.

* Individual risk assessment information can be useful in interpreting TB test results. (Lewinsohn DM, Leonard MK, LoBue PA, et al. Official American Thoracic Society/Infectious Diseases Society of America/Centers for Disease Control and Prevention clinical practice guidelines: diagnosis of tuberculosis in adults and children. Clin Infect Dis 2017;64:111–5).

<https://academic.oup.com/cid/article/64/2/111/2811357>

† Adapted from a tuberculosis risk assessment form developed by the California Department of Public Health.

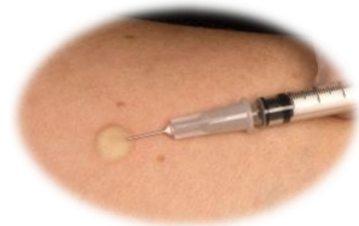




NORTH CAROLINA SPECIFIC RULES

2. Tuberculin Skin Testing (TST) may be required by agency rules or OSHA; if OSHA guidelines apply or annual testing is being done by policy, a two-step test or IGRA should be done at the time of hire

- **hospital employees**
By: OSHA
Frequency: upon employment & by risk assessment
- **operating room employees**
By: OSHA
Frequency: upon employment & by risk assessment
- **autopsy room employees**
By: OSHA
Frequency: upon employment & by risk assessment
- **mycobacteriology laboratory employees**
By: OSHA
Frequency: upon employment & by risk assessment
- **employees of ambulatory facilities that perform high hazard procedures on suspected or active tuberculosis patients**
By: OSHA
Frequency: upon employment & by risk assessment
- **emergency medical personnel with direct patient contact**
By: OSHA
Frequency: upon employment & by risk assessment



NORTH CAROLINA SPECIFIC RULES

- ▶ A 2-step TST or IGRA is provided free of charge to new employees who cannot provide a documented negative TST or IGRA within the preceding twelve months
- ▶ Those who provide a documented negative TST within the preceding twelve months receive a single TST and this result is considered the second part of the two-step test.



<https://epi.publichealth.nc.gov/cd/lhds/manuals/tb/toc.html>



CDC GUIDELINES – UPDATED- *March 5th*

- ▶ COVID-19 vaccines should not be delayed because of testing for TB infection.
- ▶ Testing for TB infection with one of the immune-based methods, either the tuberculin skin test (TST) or an interferon release assay (IGRA), can be done before or during the same encounter as COVID-19 vaccination.
- ▶ When testing with TST or IGRA cannot be done at the same time as COVID-19 vaccination, these tests should be delayed ≥ 4 weeks after the completion of COVID-19 vaccination but generally should not be cancelled.

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NC DEPARTMENT OF
**HEALTH AND
HUMAN SERVICES**

ROY COOPER • Governor
MANDY COHEN, MD, MPH • Secretary
MARK T. BENTON • Assistant Secretary for Public Health
Division of Public Health

January 28, 2021

TO: Local Health Department TB Staff
FROM: Jason Stout, MD, MHS, TB Controller/Medical Director
RE: SARS-CoV-2 vaccine and tuberculosis screening

The North Carolina Tuberculosis Control Program, in consultation with the North Carolina Tuberculosis Advisory Committee, recommends that tuberculosis screening with the tuberculin skin test or interferon gamma release assays may be performed without regard to the timing of SARS-CoV-2 vaccination. Similarly, vaccination with an mRNA vaccine (Pfizer or Moderna) may be performed without regard to the timing of tuberculosis screening.

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MANAGING TB PATIENTS



PROMPT TRIAGE



- ▶ Primary risk is patient with undiagnosed/unrecognized TB
- ▶ Initiate Airborne Infection Isolation (AII) and manage/transfer patients with suspected/confirmed TB
 - ▶ Ask about and evaluate for TB
 - ▶ Check for signs and symptoms
 - ▶ Mask symptomatic patients
 - ▶ Separate immunocompromised patients



CRITERIA FOR INITIATING AII PRECAUTIONS

- ▶ Know or suspected pulmonary, laryngeal or miliary (disseminated) TB disease
- ▶ Patients with known or suspected open/draining TB abscesses or have wound drains in place (JP)
- ▶ Gastric Aspirate (pediatrics only) culture positive for TB
- ▶ Rule out TB in differential diagnosis and AFB smears ordered
- ▶ Previously diagnosed smear-positive TB readmissions

<https://epi.publichealth.nc.gov/cd/lhds/manuals/tb/toc.html>



CRITERIA FOR DISCONTINUING AII PRECAUTIONS

- ▶ Sputum specimen results meet CDC criteria for discontinuation of respiratory isolation;
- ▶ Patient has 2 consecutive negative AFB smears collected at least 8 hours apart;
- ▶ It has been at least seven days since the last positive sputum smear and
- ▶ Patient has been compliant on TB medications to which the organism is susceptible and there is evidence of clinical response to treatment

<https://epi.publichealth.nc.gov/cd/lhds/manuals/tb/toc.html> Chapter XI



CDC CRITERIA FOR DISCONTINUING AII PRECAUTIONS

- ▶ Patients can be considered noninfectious when they meet **ALL** of the following three criteria
 - ▶ The patient has three consecutive, negative AFB sputum smear collected in 8–24-hour intervals and at least one specimen should be an early morning specimen
 - ▶ They are compliant with an adequate treatment regimen for two weeks or longer; and
 - ▶ Their symptoms have improved clinically

CDC recommendation on infection control provide evidence-based guidance. For regulations in your area refer to state and local regulations

<https://www.cdc.gov/tb/publications/factsheets/prevention/ichcs.htm>



AIRBORNE INFECTION ISOLATION (AII) PRECAUTIONS POLICIES AND PRACTICES

- ▶ All Airborne Infection Isolation Rooms (AIIR) are single patient rooms with private bathrooms
- ▶ Entry of visitors and staff should be controlled
 - ▶ Keep door shut as much as possible; anteroom
- ▶ HCP should wear at least N-95 disposable respirators or PAPR
- ▶ Visitors should be offered N-95 and instructed on use
- ▶ Visitors symptomatic of TB have written evidence of no active disease



ALL PRECAUTIONS POLICIES AND PRACTICES

- ▶ Diagnose and Treat in the AIR
- ▶ Educate patients and visitors on All precautions and ensure compliance
- ▶ Schedule patients with TB disease for procedures when there is a minimum number of patients and HCP present
- ▶ Provide surgical mask for TB patients during transport, in waiting areas, and when others are present



All rooms should be checked daily when in use.

Results should be documented in the patient record



DISCHARGE CONSIDERATIONS

- ▶ Patient can be discharged without 3 negative sputum smears if
 - ▶ Follow-up plan and appointment has been made with local TB program
 - ▶ Patient is on standard treatment and directly observed therapy (DOT) is arranged
 - ▶ Does not reside in a congregate setting
 - ▶ No person in home <5 years old or immunocompromised
 - ▶ All in household previously exposed
 - ▶ Patient willing to stay home until sputum results negative
- ▶ Do not release if high-risk persons will be exposed



EVALUATING PROBLEMS

- ▶ Conduct contact investigations for problems such as
 - ▶ Conversion in TST or BAMT result in HCP
 - ▶ TB disease diagnosis in HCP
 - ▶ Suspected person-to-person transmission
 - ▶ IC lapses exposing HCPs
 - ▶ Possible outbreaks identified using automated lab systems



DEFINING EXPOSURE

Occupational Exposure occurs when

- ▶ The source has TB disease (pulmonary, laryngeal, milary); TB disease of skin or wound
- ▶ HCP has contact in confined space (same room) or face-to-face contact in open area
- ▶ HCP was not wearing PPE
- ▶ HCP had exposure to microbiologic sample of viable TB without PPE (laboratory exposure)



SPICE

OCCUPATIONAL EXPOSURE EVALUATION



- ▶ HCP and other exposed persons screened by symptoms and TST or IGRA as soon as possible after exposure
- ▶ Follow-up testing repeated in 8-10 weeks following exposure, if initial result negative
- ▶ Treatment is encouraged for all HCP with untreated LTBI, unless medically contraindicated.

SPICE

RESOURCES



CDC Home

CDC Centers for Disease Control and Prevention
CDC 24/7: Saving Lives. Protecting People.™

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Tuberculosis (TB)

TB is a disease caused by a bacterium called *Mycobacterium tuberculosis*. The bacteria usually attack the lungs, but TB bacteria can attack any part of the body such as the kidney, spine, and brain. If not treated properly, TB disease can be fatal. TB disease was once the leading cause of death in the United States. [Learn More >](#)

TB in Children

Domestic and Global Perspective

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Treatment
Regimens for Latent TB Infection and TB Disease, New 12-dose Regimen...

Testing & Diagnosis
Testing Methods, Tuberculin Skin Testing, Blood Tests...

TB & HIV Coinfection
Basic Information, Treatment Regimens...

Infection Control & Prevention
Infection Control in Health-Care Settings, International Travelers,

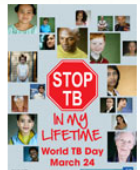
Vaccines & Immunizations
BCG Vaccine...

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World TB Day

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Diseases & Topics

Tuberculosis

North Carolina Tuberculosis Policy Manual

Memos

- [SARS-CoV-2 Vaccine and Tuberculosis Screening](#), January 28, 2021 (115 KB PDF)
- [Memo TB Manual Revisions](#), October 27, 2020 (205 KB PDF)
- [Memo Resumption Baseline TB Testing](#), September 25, 2020 (450 KB PDF)
- [Memo Resolution of TB drug shortages](#), May 22, 2020 (22 KB PDF)
- [Memo Deferring baseline tuberculosis screening for new hires](#), April 16, 2020 (34 KB PDF)
- [Memo TB Medication shortages](#), March 24, 2020 (30 KB PDF)
- [Memo Guidance for Video DOT during COVID-19](#), March 16, 2020 (33 KB PDF)

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Questions??

