

**Frequently Asked Questions about TB Protocols  
at Duke Hospital and Clinics (5-2019 Revision)**

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**A. PAPRs**

**1. Where do I get the disposable head covers for PAPRs?**

Order them from Material Services through SAP #330895. They are issued by the each. The old 3M head covers **cannot** be used with the SafetyTech FlexAir PAPRs.

**2. Where are PAPRs located? How do I order one or more?**

PAPRs are located in Equipment Distribution. If PAPRs are needed order them from Equipment Distribution through the Equipment Request Portal. ***(For immediate needs or emergent situations call the Equipment Distribution Hotline at 681-2072, 24/7).***

To return PAPRs to Equipment Distribution, place the PAPR and charger in the area where equipment is placed for return to Clinical Engineering.

**3. How do I get trained to use a PAPR?**

For “in-person” training call Biological Safety at 684-8822 to arrange a place and time for training. An instruction booklet is available at the following link: [SafetyTech FlexAir PAPR Use Instructions](#)

Online training is also available in the OESO module titled “Respirator Training for Airborne Pathogens”.

**4. Who do I call if a PAPR unit is malfunctioning?**

Order a replacement PAPR from Equipment Distribution as described above.

Tag the malfunctioning PAPR and return it to Equipment Distribution. Place the PAPR and charger in the area where equipment is placed for return to Clinical Engineering.

**5. When do I need to wear a PAPR?**

If you are not fit-tested by Employee Health with a N95 respirator mask and you need to enter the room of patient on Airborne Infectious Isolation or work in a high hazard area performing a procedure that could generate TB aerosols.

## **B. Portable HEPAs**

### **1. When are portable HEPA units needed?**

Whenever a patient on Airborne Infectious Isolation is temporarily in a room with recirculating ventilation (not an isolation room with negative pressure and dedicated or HEPA-filtered exhaust). The portable HEPA will help clear the air of TB aerosols. The door to the room should be kept closed as much as possible and the patient should be moved (with a surgical mask on) to a negative pressure isolation room as quickly as possible.

### **2. How do I use a portable HEPA?**

The instructions should be posted on the side of the machine. If not, click on the link below for the instruction sheet. [Portable HEPA Operating Instructions](#)

### **3. How do I order a portable HEPA in Duke Hospital or Duke Clinic?**

Order them from Equipment Distribution through the Equipment Request Portal. *(For immediate needs or emergent situations call 681-2072, 24/7).*

### **4. What do portable HEPA units do?**

They help to clear the air of TB aerosols.

### **5. How long should a portable HEPA unit run after a known or rule out TB patient leaves a room?**

If the patient has been in the room without a surgical mask on, the portable HEPA unit should be left running approximately 30 minutes for a patient room or exam room after the patient leaves with the door closed. Rooms larger than this should run the portable HEPA for an hour. During that time respiratory protection is still required. Once the time is up, the room can be used again without respiratory protection.

## **C. N95 Respirator Masks**

### **1. When do I need to wear an N95 respirator mask?**

If you need to enter the room of a patient on Airborne Infectious Isolation or work in a high hazard area performing a procedure that could generate TB aerosols and you are fit-tested by Employee Health.

### **2. What groups should be fit-tested?**

[Personnel Requiring N95 Respirator Fit-Testing](#)

### **3. If I am in a group that should be fit-tested, how can I get the test done?**

Call Employee Health at 684-3136 to set up an appointment. The test takes about 20 minutes.

### **4. What if I'm not fit-tested, what do I wear?**

You need to wear a PAPR unit, see section A. above.

## **5. What is the difference between an N95 respirator mask and a surgical mask?**

An N95 mask filters the air before it is inhaled by the person wearing the respirator. The employee needs to wear the N95 mask to protect his/her airway whenever he/she is in a situation where he/she may inhale TB aerosols. Surgical masks are designed to prevent the respiratory secretions of the person wearing the mask from entering the air. A surgical mask placed on the patient helps prevent the release of TB aerosols from the patient's airway into the environment. Ask the patient to wear a surgical mask whenever he/she is outside an isolation room.

## **D. Tuberculin Skin Testing (TST) – formerly called PPD Skin Test**

### **1. What does a TST do?**

The TST identifies persons infected with TB. The test consists of a small amount of purified protein derivative (PPD) that is injected under your skin on the inner surface of your forearm. The test is read 48 to 72 hours later.

For more information on TB disease, transmission, and treatment refer to the following document from the CDC:

[CDC Basic TB Facts](#)

### **2. How often do I need to be skin-tested?**

In patient care areas/buildings all employees need to receive a TST on hire.

### **3. What if I have had the BCG vaccine as a child, should I still get tested?**

Yes, and the TST results are used to support or exclude the diagnosis of TB infection. A diagnosis of TB infection and the use of treatment for infection should be considered for any BCG-vaccinated person who has a positive TST, especially if there is a likelihood of prior exposure to TB.

### **4. Do I need to receive the TST if I have a documented positive reaction in the past?**

No, but you do need to fill out a TB questionnaire in place of a TST on the same schedule as you would receive the TST.

### **5. If I have a positive TST am I infectious to other people?**

No, not unless you develop TB disease. A positive TST means that you are infected with latent TB and as long as you do not have any symptoms of TB disease you cannot spread TB to other people.

For more information on TB disease, transmission, and treatment refer to the following document from the CDC: [CDC Basic TB Facts](#)

### **6. When should the TST be read?**

48 to 72 hours after the injection.

## **7. What value is the TST to me as an employee?**

The TST identifies those persons who have been exposed and infected with TB, enabling them to receive appropriate treatment. Treatment substantially reduces the risk that TB infection will progress to disease. TST also helps identify areas in the hospital and clinic that may benefit from an evaluation of their safety practices.

## **E. Negative Pressure Isolation Rooms (with Dedicated Exhaust) – Airborne Infection Isolation Rooms (AIIRs)**

### **1. What is a negative pressure room?**

In a negative pressure room the air is set to flow *into* the room. This keeps the infectious aerosols inside the room away from people who are not using respiratory protection. In the hospital, a patient on Airborne Infection Isolation needs to be in a negative pressure isolation room with dedicated exhaust to protect other people in the hallway and nearby areas. If the room has a key above the door, it should be set to negative, and all doors including the anteroom door should be kept closed as much as possible. If the room has an air-ball indicator it should be pulled into the room (unable to see from outside the room).

### **2. Some of the isolation rooms have key switches over the door – what do they mean?**

If a patient is on Airborne Infection Isolation and there is a key above the door, it should be set to negative (-). Some of the isolation rooms do not have key switches and are set to negative pressure by Engineering & Operations. Regular patient rooms *cannot* be made into isolation rooms by adjusting the airflow – the exhaust would still be recirculated to the rest of the area.

### **3. Many of the isolation rooms have air-ball indicators – how do they work?**

Make sure the ball is pulled into the room (unable to see from outside the room). If the ball can be seen from outside the room *or* if the ball does not move when the door is opened or closed call E&O at 684-3232.

### **4. How do I check the room for negative pressure?**

Make sure all the doors are closed, including the anteroom door, then hold a small piece of tissue a few inches away from the bottom of the door. The tissue should be drawn towards the negative pressure room. If the doors are sliding glass doors, crack the doors slightly and hold the tissue a few inches out from the seam where the two doors meet. Perform and document this test at least each day that the room is used for Airborne Infection Isolation.

### **5. What do I do if the airflow is not functioning properly?**

Ask the patient to wear a surgical mask and call Engineering & Operations. In the hospital, if the negative pressure cannot be restored quickly, call Infection Prevention (684-5457, after hours pager 970-9721) and/or Bed Control to have the patient moved to a properly functioning isolation room. If the patient cannot be moved, then order a portable HEPA unit, see Section B, above.

**6. What is dedicated (or direct) exhaust?**

The air is directly exhausted to the outside, not mixed back in and recirculated to the building. Air that may contain infectious aerosols needs to be exhausted directly to the outside or HEPA filtered before it is recirculated.

**7. How are isolation rooms different from regular patient rooms?**

The main difference is the exhaust. Regular patient rooms have recirculating air systems. So the air from a regular patient room is recirculated to all the nearby areas. Isolation rooms have dedicated (or direct) exhaust that is not recirculated.

**8. Why do the doors need to stay closed as much as possible?**

The ventilation system requires that all the doors, including the anteroom door, be closed to function properly. The doors should be opened as little as possible and kept closed as much as possible. Enter the anteroom, close the door behind you, put on your respiratory protection, then enter the patient's room, closing the door behind you.

**9. Why do I need to wear respiratory protection to enter an isolation room that has negative pressure and a dedicated exhaust?**

The negative pressure and dedicated exhaust protect people outside of the room who are not wearing respiratory protection. Inside the room respiratory protection is necessary to protect your airway from infectious aerosols.

**10. Where are these isolation rooms located?**

[Airborne Infection Isolation Rooms](#)

**11. Why do I need to move a known or rule out TB patient to an AIIR instead of leaving the patient in a regular room and closing the door?**

Regular patient rooms have recirculated air systems, which means that air leaving that room is recirculated to all the surrounding areas. If a patient must stay in a regular patient room temporarily, order a portable HEPA unit from Equipment Distribution to help clear the air of potential infectious aerosols. Follow the instructions on the side of machine. Click on the link below for the instruction sheet if it is missing.

[Portable HEPA Operating Instructions](#)

**F. Designated TB Units**

**1. Where are the designated TB units and what rooms are isolation rooms?**

[Airborne Infection Isolation Rooms](#)

**2. What is the difference between a *designated TB isolation room* and a *back-up TB isolation room*?**

There is no difference in the rooms themselves, but employees are fit-tested with the N95 respirator mask on the designated TB units, not on the back-up TB units. Also, employees are more familiar with taking care of known or rule out TB patients on the designated TB units.

**3. Why are designated TB units the best place for a known or rule out TB patient to be located?**

Employees are fit-tested with the N95 respirator mask on the designated TB units and employees are more familiar with taking care of known or rule out TB patients.

**G. Back-up TB Units**

**1. What units have back-up TB isolation rooms?**

[Airborne Infection Isolation Rooms](#)

**2. What are back-up TB units?**

In DH all nursing units are classified as either designated or back-up TB units. Back-up TB units have isolation rooms that can be used for known or rule out TB patients if the designated TB isolation rooms are all occupied with patients on Airborne Infectious Isolation. Also, on occasion a patient's medical condition requires him/her to stay on a unit that is not a designated TB unit. In that case the patient should be moved to the isolation room on the unit where he/she can get appropriate care.

**3. What kind of respiratory protection is available on the back-up TB units?**

PAPRs are the respiratory protection available on the back-up TB units for those who are not fit-tested with the N95 respirator mask. See section A, above.

**H. Notifications**

**1. Who needs to be notified that a patient has been placed on Airborne Infection Isolation?**

Notify Infection Prevention at 684-5457 (after hours pager 970-9721). Infection Prevention can help you determine the best location for the patient considering their medical condition and can help you to coordinate with Bed Control if any patients have to change rooms. Also, it is important to notify Infection Prevention because they will provide appropriate reporting to the health department in the patient's county of residence if the diagnosis is tuberculosis. *Timely follow-up evaluations of close contacts can be critical, especially if any of them are young children or are immunocompromised.*

**2. Who needs to be notified before a known or rule out TB patient is discharged?**

Notify Infection Prevention at 684-5457 (after hours pager 970-9721) so that the patient's care can be coordinated with the health department in the patient's county of residence. Specific criteria must be met prior to discharge. If the patient is still considered infectious he/she will need instruction on when and where to wear a surgical mask.

**3. To whom do I report incidents of possible TB exposure to?**

Notify the Biological Safety Department at 684-8822 or call Employee Health at 684-3136. Biological Safety will follow-up on the incident and provide an exposure investigation if TB is confirmed. Since it can take several weeks to find out if TB is confirmed it may be helpful to collect the names of the potentially exposed employees. It may save some time later on.

## **I. Patient Transport**

### **1. What type of mask should a patient on Airborne Infectious Isolation wear during transport?**

A surgical mask. Surgical masks are designed to prevent the respiratory secretions of the person wearing the mask from entering the air. A surgical mask placed on the patient helps prevent the formation of TB aerosols. Ask the patient to wear a surgical mask whenever he/she is outside an isolation room.

### **2. What type of safety precautions should an employee use to transport a patient on Airborne Infection Isolation?**

Employees need to wear either the N95 respirator mask that they were fit-tested for by Employee Health or a PAPR when *entering the room* of a patient on Airborne Infectious Isolation. Ask the patient to wear a surgical mask during transport. Outside the patient room, during transport within the hospital or clinics, the employee does not need respiratory protection because the patient is wearing a surgical mask.

## **J. Cleaning TB Isolation Rooms**

### **1. How should a known or rule out TB patient's room be cleaned after discharge?**

Routine procedures are used to clean rooms vacated by known or rule out TB patients – the same cleaning procedures that are used for any other patient, but you do need to wait for the air to be cleared of TB aerosols before entering the room without respiratory protection – see question #2, below.

### **2. How long do I need to wait after a known or rule out TB patient leaves before I can enter the room without using respiratory precautions?**

For an isolation room a good rule of thumb is 30 minutes. During that time the door should remain closed and respiratory protection is still required to enter the room.

In a room with recirculated air, if the patient has been in the room without a surgical mask on, the portable HEPA unit should be left running approximately 30 minutes after the patient leaves. During that time respiratory protection is still required to enter the room and the door should remain closed.

## **K. Ventilation Times**

### **1. When is it safe to enter an isolation room without respiratory protection after a known or rule out TB patient leaves?**

For an isolation room a good rule of thumb is 30 minutes. During that time the door should remain closed and respiratory protection is still required to enter the room. The time is based on the room size and the air changes per hour, and varies from room to room.

In a room with recirculated air, if the patient has been in the room without a surgical mask on, the portable HEPA unit should be left running approximately 30 minutes after the patient leaves. During that time respiratory protection is still required to enter the room and the door should remain closed.

## **L. Discharge Planning**

### **1. Who needs to be notified that a known or rule out TB patient is being discharged?**

Notify Infection Prevention at 684-5457 (after hours pager 970-9721) so that the patient's care can be coordinated with the health department in the patient's county of residence. Specific criteria must be met prior to discharge. If the patient is still considered infectious he/she will need instruction on when and where to wear a surgical mask.

## **M. Possible TB Exposures**

### **1. What do I do if there is a possible TB exposure in my area?**

Notify Biological Safety at 684-8822 or Employee Health at 684-3136. Biological Safety will follow-up on the incident and provide an exposure investigation if TB is confirmed. Since it can take several weeks to confirm TB it may be helpful to collect the names of the potentially exposed employees to save some time later on. Employee Health will follow-up with Tuberculin Skin Testing at the appropriate time using the concentric circles methodology if TB is confirmed.

### **2. Why does it sometimes take so long to find out about TB exposures?**

The bacteria that cause TB are very slowly growing and can take weeks to identify in the laboratory. The sputum smear is a fast laboratory result, but it is not specific for tuberculosis; other closely related bacteria can be smear positive also. So not all smear positive patients are diagnosed with tuberculosis. And smear negative patients can be diagnosed with tuberculosis when their culture grows the TB bacteria weeks later.

### **3. When does a TB exposure investigation begin?**

Only when the TB suspect patient is culture positive for tuberculosis. There are many more instances of rule out TB that are not confirmed than there are actual instances of culture positive TB.

### **4. If you have been exposed to TB are you infected?**

No, many more people are exposed than are infected.

### **5. When are exposed employees tested for possible infection?**

If you are infected with TB it will take your immune system 8 to 10 weeks to respond. Once your immune system has responded, your TST will then be positive. After an exposure, employees who have not had a previous TST will be tested to obtain a baseline. Exposed employees will then be provided with follow-up TST using the concentric circles methodology through Employee Health approximately 8 to 10 weeks after the exposure.

### **6. Where can I get more information about TB disease, transmission, and treatment to read?**

[CDC Basic TB Facts](#)

## 7. I've been exposed to TB; can I bring it home to my family?

No, TB is not spread through touching, so you don't have to take any extra precautions if you are worrying about carrying the bacteria home on your clothes or skin. TB is transmitted by infectious aerosols produced by persons with active pulmonary TB disease. These aerosols need to be inhaled for transmission to occur.

## 8. Who does the TST associated with potential TB exposures?

Employee Health will follow-up with employees involved in a possible TB exposure and provide them with TST at the appropriate time using the concentric circles methodology.

## N. Infectiousness

### 1. When is a confirmed TB patient no longer considered infectious?

When he/she meets all of these criteria:

- ❖ The patient has two consecutive sputum smears collected at least eight hours apart which are negative, one of which should be an early morning specimen. AND
- ❖ The patient has been compliant for at least 14 days on tuberculosis medications to which the organism is judged to be susceptible; AND
- ❖ There is evidence of clinical response to tuberculosis treatment.

### 2. Can a patient that is still considered infectious go out in public (this includes clinic visits and health department visits)?

After discharge the patient will follow instructions from the Health Department in their county of residence which will include instructions on wearing a surgical mask in public. For any medically necessary DUHS clinic visits refer to the [TB Exposure Control Plan](#) for specific instructions. Clinic visits are covered in detail in Chapter VII, Section D. Appendix G of this plan provides flowcharts for the hierarchy of controls needed in the clinics. These flowcharts can also be found on the Safety website at this link [Clinic Visits from TB Patients – Hierarchy of Controls](#).

### 3. If I have a positive TST am I infectious to other people?

No, not unless you have the signs and symptoms of TB disease. Persons who are infected but who do not have TB disease are without symptoms and are not infectious. Transmission occurs from persons with active pulmonary TB disease, and persons with active pulmonary TB disease have signs and symptoms.

## O. Off-site Clinical Facilities

### 1. What kind of respiratory protection is available in off-site clinical facilities?

Ask TB suspect patients and known TB patients that are still infectious to wear a surgical mask for their entire visit if possible. As long as the patient has on a surgical mask the employee does not need respiratory protection. In a medical emergency with an unmasked patient, a N95 respirator is acceptable temporary protection whether the employee is fit-tested or not. For more safety information on clinic visits from TB patients refer to the [TB Exposure Control Plan](#) for specific instructions. Clinic visits are covered in detail in Chapter VII, Section D. Appendix G of this plan provides flowcharts for the hierarchy of controls

needed in the clinics. These flowcharts can also be found on the Safety website at this link [Clinic Visits from TB Patients – Hierarchy of Controls](#).

**2. There is not a portable HEPA unit at my facility. How long do I need to wait to enter an exam room without respiratory protection, if a known or suspect TB patient was in there without a surgical mask on?**

Wait approximately 1 hour for an exam room after the patient leaves with the door closed. During this time respiratory protection is needed to enter to the room. Once the hour is up the room can be used again, following the regular cleaning protocol that is used for any other patient.

**3. How are exam rooms cleaned after a known or suspect TB patient leaves? When can the room be used again?**

Wait approximately 1 hour for an exam room after the patient leaves with the door closed before entering the room. Routine procedures are used to clean rooms vacated by known or rule out TB patients – the same cleaning procedures that are used for any other patient. Once the hour is up the room can be used again without using respiratory protection.