



Respiratory Protection Programme for Healthcare Facilities

By: Katekani Ngobeni

Tell: 012 841 2518

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Purpose

The purpose of this standard operating procedure/programme is to ensure the protection of all employees from respiratory hazards caused by exposure to Tuberculosis (TB), through the proper use of respirators in healthcare facilities, by everyone using a respirator.

Roles and responsibilities:

Employer:

- Provide and Ensure a safe working environment for employees and patients
- Ensure that a risk assessment is undertaken at periods not exceeding two years
- Provide all necessary Personal protective equipment required for protection against the identified respiratory hazards.
- Ensure that every employee undergoes all necessary medical surveillance before resuming employment; it should also be conducted and routinely monitored henceforth.

Respiratory Programme Manager (RPM):

The Respiratory Programme manager is responsible for administering the respiratory protection programme.

Duties of the RPM include:

- Should form part of the Infection control and/or occupational health and safety committee
- Identify work areas, processes, or tasks that require respiratory protection
- Monitor all respiratory policy and standards relevant for respirators, for changes and make changes to facility programme
- Select respiratory protection products
- Ensure compliance of selected respirators
- Monitor respirator use to ensure that respirators are used in accordance with their certification and manufacturer's specifications
- Distribute information, educational and communication (IEC) material relating to respirators.
- Evaluate any feedback information of surveys/assessments.
- Arrange for and/or conduct training and fit testing.
- Ensure proper use and storage of respiratory protection equipment.



Supervisor:

The Supervisor for the respiratory protection programme may also be the RPM. Supervisors are responsible for ensuring that the RPP is implemented in their particular units/departments.

In addition to being knowledgeable about the programme requirements for their own protection, Supervisors must also ensure that the programme is understood and followed by the employees under their charge.

Duties of the Supervisor include:

- Knowing the hazards in the area in which they work.
- Knowing types of respirators that need to be used.
- Ensuring the respirator programme procedures is followed.
- Enforcing/encouraging staff to use required respirators.
- Ensuring employees receive training and medical evaluations.
- Coordinating retraining and/or fit testing of personnel.
- Notifying RPM/ relevant department with any problems with respirator use, or changes in work activity that might impact on respirator efficiency.
- Ensure proper use and storage all respirators.

Employee/personnel

- Participate in all training and medical evaluations.
- Participate in fit-testing.
- Remind RPM/RPS on next fit-testing date.
- Don and doff respirator correctly.
- Report malfunctions or concerns.
- Cooperate during assessments.
- Use IEC material provided to them.

Application

This standard operating procedure/programme applies to all employees who could potentially be exposed to airborne respiratory illnesses during working hours, and during non-routine or emergency situations. Some of the types of work activities required to wear respirators are outlined in the table below:

Work Process/Area	Location	Type of Respirator
Contact tracing/disease investigation	Community Settings	≥N95 or ≥FFP2- disposable Respirator
Patient contact/care	Patient Care Areas	≥N95 or ≥FFP2- disposable Respirator
Outpatient Department	Hospitals	≥N95 or ≥FFP2- disposable Respirator
Waiting areas	Hospitals/CHC/Clinics	≥N95 or ≥FFP2- disposable Respirator

Minimum requirements

The following are a list of minimum requirements that every facility should meet with regards to respirator use and management.

1. Respirators will be selected on the basis of the following legal framework:
42 CFR 84
SANS 50149:2003
SANS 1866
VC8072
2. All selections will be made by the RPM.
3. The user will be instructed and trained in the proper use of respirators and their limitations.
4. Both supervisors and workers will be trained by the RPM. The training should provide the employee an opportunity to handle the respirator, have it fitted properly, test its face seal, wear it in normal air conditions for an adequate familiarity period, and finally to wear it in a test atmosphere.
5. Every respirator wearer will receive fitting instructions, including demonstrations and practice in how the respirator should be worn, how to adjust it if applicable, and how to perform seal check.



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6. Respirators should not be worn when conditions prevent a good face seal. Such conditions may be a growth of facial hair, a skull cap that projects under the face piece.
7. To ensure proper protection, the user seal/fit check will be done by the wearer each time she/he puts on the respirator.
8. The manufactures instructions will be followed at all times.
9. Under no circumstances will a respirators be shared amongst personnel
10. Disposable respirators will be discarded if they are soiled or are no longer functional.
11. There will be regular inspections and evaluations to determine the continued effectiveness of the programme.
12. Personnel will not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work and use the equipment.

Respirator technical specifications

Type of respirator: Particulate filtering half mask: Disposable

Description: Particulate filtration respirators used for protection against airborne infections such as tuberculosis.

- a particulate filtration half mask must cover the chin, mouth and nose; it may/ may not have an exhalation valve
- The particulate filtration respirator must not disintegrate or liberate materials during continuous or intermittent use in a 12 hour work day.
- Parts of the particulate filtration respirator that are more likely to come into contact with the wearer must be hypo-allergenic.
- Filter performance must meet standards relevant to the specific respirator classification.
- The respirator must have an adjustable/self-adjustable head harness which ensures ease of donning or removal of the respirator.
- The particulate filtration respirator shall have filtration efficiency greater or equivalent to EN 143 P2.
- The particulate filtration respirator shall have the equivalent of an external hydrophobic fabric layer for droplet protection.

Labeling:

1. Name or trademark
2. Filter efficiency/Classification
3. Approval number
4. Standard compliance
5. Size of the respirator

Compliance



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1. Must be compliant with SANS 50149/EN 149, Respiratory protective devices – Filtering half masks to protect against particles – Requirements, testing, marking.
2. or SANS 1866 part 2, Medical Respirators: 2017 standard (prospective).
 - 2.1. and 42 CFR-84, Approval of respiratory protective devices
3. Should appear on the National Regulator for compulsory Standards (NRCS) PPE homologation database:
 - 3.1. <http://www.nrcs.org.za/siteimgs/CMM/Homologation%20Database%20-%20PPE.pdf> (last viewed 22/01/2018)
4. Sizes: Small, Regular/Med, Large

Respiratory protection programme

Risk Assessment



A risk assessment should be conducted initially, as a baseline, to identify airborne infection high risk areas. These areas must be marked as Personal Protective Equipment Zone. Every person entering into this zone should wear a respirator at all times. The respirators selected will be used for respiratory protection from potentially airborne infectious diseases such as TB.

Respirator Selection

The following respirators that should be used for protection against TB should be:

- Respirators which fall under the NRCS homologation list
- Respirators which meet the SANS 1866 standards
- Respirators which meet the SANS 50149:2003
- Respirators which meet the CDC:NIOSH standard 42 CFR 84
- Respirators which meet the European standard EN 149:2001+A1:2009
- These can either be \geq N95 or \geq FFP2 respirators.

Medical Evaluation

- Persons assigned to tasks that require respiratory protection must be physically able to perform the tasks while wearing a respirator.
- An occupational health physician, personal physician, medical practitioner will determine individual medical clearance by a medical questionnaire and/or medical exam. Employees refusing a medical evaluation will not be allowed to work in conditions requiring respirator use.
- Re-evaluation will be conducted under these circumstances:
 1. Employee reports physical symptoms that are related to the ability to use a respirator. (Wheezing, shortness of breath, chest pain, etc.)
 2. It is identified that an employee is having a medical problem during respirator use.
 3. The healthcare professional performing the evaluation determines an employee needs to be re-evaluated and the frequency of the evaluation.
 4. A change occurs in the workplace conditions that may result in an increased physiological burden on the employee.
 5. Employee facial size/shape/structure has changed significantly.
- All examinations and questionnaires are to remain confidential between the employee and the person conducting the evaluation.



Fit Testing

After the initial fit test, fit tests must be completed at least annually or more frequently if there is a change in status of the wearer or if the employer changes model or type of respiratory protection.

Fit testing can be conducted using either the qualitative or quantitative method. Fit testing procedures must be attached as an annexure in this programme.

- Fit tests are conducted to determine that the respirator fits the user adequately and that a good seal can be obtained.
- Fit tests will be conducted:
 1. prior to being allowed to wear any respirator.
 2. If the healthcare facility/department changes respirator product.
 3. If employee changes weight by 10% or more.
 4. If employee has changes in facial structure or scarring.

Proper Respirator Use

General Use

- Employees will use their respirators under conditions specified by this programme, and in accordance with the training they receive on the use of the selected model(s). In addition, the respirator shall not be used in a manner for which it is not acceptable by the mentioned regulatory framework or by its manufacturer.
- All employees shall conduct user seal/fit checks each time they wear a respirator.
- All employees shall change (\geq N95/ \geq FFP2) their respirator if the respirator is impeding their ability to work.

Maintenance and Use

- \geq N95/ \geq FFP 2 respirators
 - If patient not in Contact Precautions area/process (e.g., TB), discard if soiled, if breathing becomes difficult, or if structural integrity is compromised.

Inspecting, Maintenance and Repairs

All types of respirators should be inspected prior to use.

- \geq N95/ \geq FFP2
 1. Examine the face piece of the disposable respirator to determine if it has structural integrity. Discard if there are abrasions, cuts, or creases in seal area or if the filter material is physically damaged or soiled.
 2. Check the respirator straps to be sure they are not cut or otherwise damaged.
 3. Make sure the nose clip is in place and functions properly (if applicable).
 4. Disposable respirators are not to be stored after use. They are to be discarded.

Respirator Training

- Workers will be trained prior to the use of a respirator and thereafter when deemed necessary by the Respiratory Programme manager.
- Training will include:
 - Identify hazards, potential exposure to these hazards, and health effects of hazards.
 - Respirator fit, improper fit, usage, limitations, and capabilities for maintenance, usage, cleaning, and storage.
 - Emergency use if applicable.
 - Inspecting, donning, removal, seal/fit check etc.
 - Explaining respirator programme (policies, procedures, standards and resources).

Evaluating/Updating Programme

The Respiratory Programme Manager will complete an annual evaluation of the respiratory protection programme.

- Evaluate any feedback information or assessments.
- The Respiratory Programme Manager will review any new hazards or changes in programme that would require respirator use.
- The Respiratory Program Administrator will make recommendations for any changes needed in the respiratory protection programme.



Documentation and Record-keeping

- A written copy of this programme must be well documented
- OHS maintains the medical information for all employees covered under the respiratory programme.
- The completed medical forms and documented medical recommendations are confidential and will remain with/in infection control practitioner/OHS
- All relevant medical information must be maintained for the duration of the employment of the individual plus forty years.



Annexure 1

Departmental Operating procedure

≥ N95/≥FFP2 respirators were chosen as protection against *Mycobacterium Tuberculosis* (TB) during care of TB presumptive and tb patients. Rationale for selecting the respirators used in this operation is stated in the respiratory protection programme (RPP).

The respiratory protection programme manager (RPPM) will conduct inspections of this unit/department to ensure that the correct respirators are being used; that they are being worn properly; and that they are in good working condition. The respiratory protection programme manager's written record of inspection dates and findings shall be maintained in the RPP. Before wearing respirators, all personnel must be medically qualified, fit tested, and trained on how to correctly use a respirator. It is the responsibility of the personnel to notify the respiratory protection programme manager of any of the changes listed below or other circumstances that might interfere with the facial seal of the respirator.

1. Weight change of more than 10%.
2. Facial scarring in area of face seal.
3. Any dental changes.
4. Any reconstructive surgery or cosmetic surgery.

Each personnel is responsible for properly wearing their respirator and performing a seal/fit check.

Details of RPPM

Name:

Contact details

Designation:



Reference:

EUROPEAN COMMITTEE FOR STANDARDIZATION, 2001, Respiratory protective devices- Filtering half masks to protect against particles- Requirements, testing, marking. (EN 149). European Standard. Brussels.

EUROPEAN COMMITTEE FOR STANDARDIZATION, 2005, Respiratory protective devices- Recommendations for selection, use, care and maintenance- Guidance document. (EN 529). European Standard. Brussels.

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, 2006, *Major requirements of OSHA's Respiratory Protection Standard, (29 CFR 1910.134)*, United States Department of Labour, United States of America.

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, *Fit testing procedure (Mandatory)*, ([1910.134 App A](#)), United States Department of Labour, United States of America