Ministry of Health and Long-Term Care
Ministère de la Santé et des Soins de longue durée

Ontario

Emergency Health Services Branch
5700 Yonge Street, 6th Floor
Toronto ON M2M 4K5

Telephone: (416) 327-7909
Facsimile: (416) 327-7879
Toll Free: (800) 461-6431

Direction des services de santé d'urgence
5700 rue Yonge, 6e étage
Toronto ON M2M 4K5

Téléphone: (416) 327-7909
Télécopieur: (416) 327-7879
Appels sans frais: (800) 461-6431

March 27, 2003

MEMORANDUM TO: Municipal EMS Directors and Managers

FROM: Malcolm Bates
Director
Emergency Health Services Branch

RE: **UPDATED INFORMATION**
Training Bulletin, Issue Number 103, Version 1.1
Severe Acute Respiratory Syndrome (SARS)

As you are aware, the numbers of both suspect and confirmed cases of severe acute respiratory syndrome (SARS) have increased dramatically over the last several days. The attached training bulletin has been updated in consultation with the Public Health Branch to further assist EMAs and Paramedics with N95 Respirator fitting instructions and decontamination procedures. Included in this bulletin as attachments are detailed photographic direction on the use of the N95 mask, Virox™ information, and copies of the N95 Respirator Mask and Safety Eyewear Training Programs.

Please share this information with your EMA and Paramedic staff immediately. Additionally, these documents will be provided to you on a CD-ROM in the next few days, and will also be posted to the www.amo-ehs.com web site. Please contact Ms. Cathy Francis, Manager of Education and Patient Care Standards at (416) 327-7843 or by pager at (416) 235-9988 if you require additional information.

M. Bates

Malcolm Bates

c: CAO's of Upper Tier Municipalities and Designated Delivery Agents
F. Rusk
D. Brown
T. Powell
Senior Field Managers, EHSB
CACC Managers
Regional Training Coordinators
C. Francis
Heads of Paramedic Programs
J. Van Pelt
R. Nishman

Encl.

Training Bulletin

Severe Acute Respiratory Syndrome (SARS)

March 27 2003

Issue Number 103
Version 1.1

Emergency Health Services Branch
Ministry of Health and Long-Term Care

Table of Contents

Training Bulletin, Issue Number 103 (version 1.1)
Severe Acute Respiratory Syndrome (SARS)

Introduction

This bulletin has been updated to further assist EMAs and Paramedics in identifying people who may have contracted severe acute respiratory syndrome (SARS) and to emphasise the extreme importance of ambulance personnel taking appropriate precautions to protect themselves and to limit the spread of this and other communicable diseases to others.

At the time of release of this bulletin, the cause of SARS is not conclusively known, however national and international collaboration, surveillance and laboratory testing is ongoing. Health Canada is working with the provinces and territories in initiating enhanced surveillance and contact tracing in confirmed cases of SARS.

As a part of outbreak measures, the Ministry of Health and Long-Term Care (MOHLTC) has now made SARS a reportable disease, a communicable disease and virulent disease under the Health Protection and Promotion Act (HPPA).

Identification of Potential Cases of SARS

This information is based on the information currently available from Health Canada.

The incubation period for SARS is currently believed to be up to ten (10) days. EMAs and paramedics should suspect that a person may be suffering from SARS if the following criteria is present:

a) The person presents with a fever (over 38 degrees Celsius)

AND

b) The person has one or more respiratory symptoms including: cough, shortness of breath or difficulty breathing. Note: In addition to fever and respiratory symptoms, SARS may be associated with other symptoms such as headache, myalgia, loss of appetite, malaise, confusion, rash and diarrhea

AND

c) The person has a recent (within the past 10 days) history of travel to Asia, especially to one of the countries reporting cases of SARS;

OR

Is a contact of a person who is a known case (within the past 10 days);

OR

There is no known cause of the current Illness.

Standard universal/body fluid precautions should be exercised when providing patient care to all patients regardless of the cause of their illness.

Recommended Protective Practices for EMAs/Paramedics Providing Care to Patients with Suspected SARS

- Non-latex gloves should be worn when caring for patients where there is risk of exposure to blood or body fluids.
- The N95 Particulate Respirator Mask should be used when managing patients with suspected SARS
- An N95 Particulate Respirator Mask should be placed on the patient whenever possible.
- All persons travelling in the ambulance (including the driver's compartment) should wear an N95 Particulate Respirator Mask.
- Whenever possible, consider limiting additional passengers travelling with the patient in the ambulance.
- Safety eyewear should be worn if there is any risk of splashing of blood or body fluids.
- Infection control gowns should be worn if there is risk of contamination of clothing or exposed skin by blood or body fluids.
- Hand washing with soap and water or using an alcohol-based hand cleanser should be done immediately following any patient contact.

N95 Particulate Respirator Mask

Standard surgical masks do not afford the same level of protection as a N95 Particulate Respirator, because they filter less than 50% of airborne particles that are 1-5 microns in size and have marked leakage because of loose facial seals. The N95 complies with the **Particulate Respirator Mask** minimum requirements (Standard L2-155), as listed in the *Provincial Equipment Standards for Ontario Ambulance Services, version 1.1.*

An N95 Particulate Respirator Mask may be worn up to 12 hours and remain effective provided that the mask does not become wet or damaged. Masks that become wet or are damaged must be replaced.

Ambulance personnel need to know how to effectively wear the respirator to ensure a tight facial seal. For the mask to properly filter out droplet nuclei, the air must pass **through** and **not around** the mask. Personnel are encouraged to ensure that all facial hair that may interfere with the respirator and face seal is removed prior to commencing any shift. **There may be a higher risk of disease transmission for ambulance personnel with facial hair as the fit may not be as tight as for those without facial hair.**

Included with this bulletin is a poster (courtesy of 3M Inc.), which provides detailed instructions on how to properly fit an N95 Mask. As well, copies of the N95 Particulate Respirator Mask and Safety Eyewear Training Programs have been appended to this bulletin. EMAs and Paramedics are encouraged to review these documents.

Transporting Cases of Suspected SARS

Receiving institutions must be notified of any patient(s) with potential Severe Acute Respiratory Syndrome prior to arrival, as these patients may require specialized isolation rooms. Ambulance crews may be redirected by their Central Ambulance Communications Centre (CACC) to an institution where the appropriate isolation facilities are available. There may also be instances where crews are directed to transfer patients suffering from SARS from one institution to another. Physicians and hospitals will be asked to inform the CACC of this fact so that this information can be provided to the responding ambulance crew. This is to enable the ambulance crew to prepare for the transfer by ensuring that all necessary protective equipment and clothing are available.

Bio-hazardous waste, (dressings, bandages, gloves, masks, gowns, contaminated sheets, etc.) are to be placed in an appropriate receptacle, clearly marked as **"BIO-HAZARDOUS MATERIAL"** and disposed of according to **local service policy**. Bio-hazardous waste must never be left at a scene.

Decontamination of Equipment and Vehicles

Following the transport of a patient with suspected SARS, EMAs and Paramedics must decontaminate the vehicle, stretcher and any equipment used during the call. It is recommended that Virox-5™, an accelerated hydrogen peroxide base formulation, be used as the disinfectant of choice for this purpose. Studies have concluded that Virox-5™ is over 99% effective in disinfecting surfaces when used according to manufactures specifications. The product is therefore suitable for use as a high level disinfectant and is safer than many other broad-spectrum germicides.

Virox-5™ is available in both "ready to use" and concentrated formulas. The concentrated form must be mixed with water according to the manufacturer's directions (1:16 ratio of Virox-5™ to water = 250ml of Virox-5™ per 4 litres of water).

A distributor of Virox-5™ has provided the following information pertaining to the use of their product in the pre-hospital setting. Ambulance personnel may find this information useful.

- Virox-5™, allowed to sit wet on a surface for at least 5 minutes will destroy 99.9% of enveloped viruses and vegetative bacteria (including Superbugs).
- Virox-5™, allowed to sit wet on a surface for at least 5 minutes will destroy 99.99% of all viruses and vegetative bacteria.
- Virox-5™ is very effective at cleaning Clostridium difficile spores off of surfaces, but no disinfectant – including Virox-5 – will kill them.
- Virox-5™ is safe for contact with skin and eyes, although wearing gloves when cleaning is a good practice. Double gloving is unnecessary.
- Virox-5™ is not intended for hand antisepsis.
- Virox-5™ is not poisonous or toxic if ingested.
- Virox-5™ is safe to use on all hard surfaces and fabrics.

Cleaning materials (cloths, sponges, etc.) used to decontaminate vehicles and equipment must be considered bio-hazardous. They are to be placed in an appropriate receptacle, clearly marked as "Bio-hazardous Materials" and disposed of according to **local service policy**.

Information has been appended to this bulletin regarding Virox-5™ and its use. Additional information can be obtained by contacting Virox Technologies Inc. directly. Contact information has been provided in the reference section.

Further Information and Updates

For further information on Severe Acute Respiratory Syndrome and the latest information on the status of the disease in Canada, EMAs and Paramedics can review the Health Canada web site at **www.hc-sc.gc.ca/english/protection/warnings/2003/2003_11.htm** or contact their local health unit. EMAs and Paramedics are also encouraged to review the following documents:

N95 Respirator Training Program Participant's Guide (attached)
Ministry of Health and Long-Term Care, Emergency Health Services Branch
Core Training Program
August 1999

Safety Eyewear EMA Training Package (attached)
Ministry of Health and Long-Term Care, Emergency Health Services Branch
Core Training Program
February 1997

Basic Life Support Patient Care Standards, Version 1.1 (September 1999)
General Standard of Care
Ministry of Health and Long-Term Care, Emergency Health Services Branch
Available through Ronen House by calling 800-856-2196.

Preventing and Assessing Occupational Exposures to Communicable Diseases
Ministry of Health and Long-Term Care, Emergency Health Services Branch
Core Training Program
January 1996
Available on the **www.amo.ehs.com** web site. Click on the "Library" link.

Provincial Equipment Standards for Ontario Ambulance Services, Version 1.1
Particulate Respirator Mask (Standard Number L2-155)
Available on the **www.amo.ehs.com** web site. Click on the "Library" link.

Additional contact information:

3M Canada Inc.
1-800-563-2921
www.3M.ca

Virox Technologies Inc.
1-800-387-7578
www.virox.com

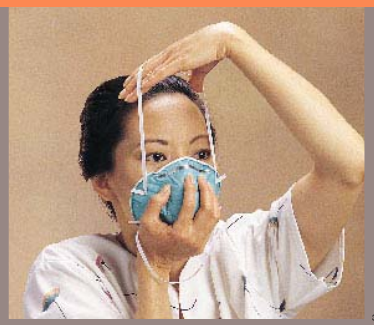
Wear It Right 3M Respirators

3M™ 1860/1860S Health Care N95 Particulate Respirator and Surgical Mask

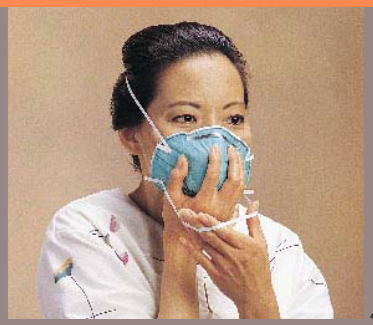
APPLICATION:

1 Cup the respirator in your hand with the nosepiece at fingertips, allowing the head straps to hang freely below hand.

2 Position the respirator under your chin with the nosepiece up.



3 While holding the respirator in place, pull the top strap over your head so it rests high on the back of your head.



4 While continuing to hold the respirator firmly in place, pull the bottom strap over your head and position it around your neck, below your ears. Untwist the straps. Position the respirator low on your nose.

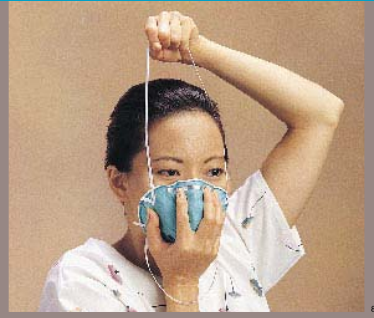
5 Using both hands, mold the nosepiece to the shape of your nose by pushing inward while moving your fingertips down both sides of the nosepiece. **Note: Always use two hands when molding nosepiece. Pinching with one hand may result in improper fit and less effective respirator performance.**

POSITIVE PRESSURE FIT CHECK:

6 The respirator seal must be checked before each use. To perform the fit check, place both hands completely over the respirator, being careful not to disturb the position, and exhale sharply. If air leaks around your nose, adjust the nosepiece as described in step 5. If air leaks at respirator edges, adjust the straps back along the sides of your head. Perform fit check again if an adjustment is made. If you cannot achieve a proper fit, see your supervisor. Do not enter area requiring respirator use.

REMOVAL:

1 Hold the respirator in your hand to maintain position on face. Pull bottom strap over head.



2 Still holding respirator in position, pull top strap over head.

3 Remove respirator from face and store or discard according to your facility's policy.

⚠ WARNING

This respirator helps protect against certain particulate contaminants but does not eliminate exposure to or risk of contracting disease or infection. Misuse may result in sickness or death. For proper use, see your supervisor or call 3M Occupational Health and Environmental Safety Division Technical Service at 1-800-243-4630.

3M Health Care
3M Center, Building 275-4E-01
St. Paul, MN 55144-1000
USA
1-800-228-3957

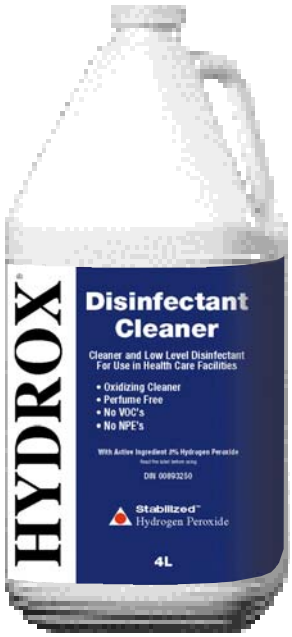
3M Canada, Inc.
Post Office Box 5757
London, Ontario N6A 4T1
Canada
1-800-563-2921

Recycled Paper
40% pre-consumer
10% post-consumer

Printed in U.S.A.
H.I. 4509

3M Health Care

Cleaning and Disinfecting in a Health Care Environment using just two products.



DILUTE
1:256

LIGHT DUTY CLEANING

Daily floors and walls.

Mop or wipe surface and allow to air dry. No Rinsing Required.

DILUTE
1:64

HEAVY DUTY CLEANING

All hand contact and wet damp areas (call buttons, bathroom fixtures, counter tops, railings).

Damp wipe surface, allow to air dry. No Rinsing Required

Also available in a convenient Ready to Use format.

DILUTE
1:16

CLEANING & BROAD-SPECTRUM 99.999% ACTIVITY

Including VRE & MRSA outbreaks. Treat all hand contact and wet damp areas (call buttons, bathroom fixtures, counter tops, railings).

Apply diluted solution to surface, allow to remain wet for ***30 seconds* and wipe or air dry. No Rinsing Required.**

BLOOD SPILL CLEAN-UP & DISINFECTION

Blood & body fluids.

Appropriate protective clothing/gear should be worn. Remove excess blood and fluids with absorbent material.

Clean – Damp wipe surface with diluted solution, wipe dry. No Rinsing Required.

Disinfect – Apply diluted solution and allow to remain wet for ***5 minutes*. Wipe dry.**

DISINFECTING – NON CRITICAL ITEMS & EQUIPMENT

Coming in contact with intact skin – requiring low level disinfection.

Clean – Pre-clean with diluted solution to remove organic debris. Wipe dry.

Disinfect – Wipe surface or immerse item in diluted solution. Ensure the surface or item remains wet for ***5 minutes*. Wipe or air dry.**

DILUTE
1:64

CRITICAL CARE FLOORS

Operating Rooms, ICU, Isolation, Emergency, Ambulatory.

Wipe floor or clean with auto scrubber. Allow to air dry. No Rinsing Required.

Follow *Infection Control Guidelines* to prevent the spread of resistant pathogens. Avoid redistribution of microorganisms. Clean less contaminated areas first and change cleaning solution and cloths often.

USE DILUTIONS MADE EASY

RATIO	PER 4 L WATER	PER US GALLON WATER
1:256	16 ml	1/2 oz
1:64	63 ml	2 oz
1:16	250 ml	8 oz

VIROX TECHNOLOGIES INC.

For more information about other Accelerated Hydrogen Peroxide and Stabilized Hydrogen Peroxide products call: 1-800 387-7578 or visit our Web site at www.virox.com

Participants Guide

N95 Respirator Training Program

March 2003

Version 1.1

Emergency Health Services Branch
Ministry of Health and Long-Term Care

Table of Contents

General Course Information

Training Objectives

A. Upon completion of this course, the EMA/Paramedic will be able to meet the following objectives:

1. Describe the design and features of the 3M N95 1860 particulate respirator.

2. Relate when to use the 3M N95 1860 particulate respirator

3. Demonstrate competency as per the performance checklist with respect to donning and removing the 3M N95 1860 particulate respirator and conducting a Positive Pressure Fit Check.

4. State how to effectively store the 3M N95 1860 particulate respirator.

Pre-Course Preparation

Prior to beginning this course, the EMA/Paramedic is required to read this **Participant's Guide**. The participant is required to bring this document and writing materials to the in-class session.

Introduction

During the course of their duties, health care workers including ambulance personnel may sometimes be exposed to communicable diseases including those that could be potentially spread through the respiratory system e.g. infectious TB (tuberculosis). To help address this, the **Laboratory Center for Disease Control (LCDC of Health Canada) has issued recommendations for health care workers regarding the selection of a protective mask suitable for respiratory protection against Tuberculosis** (see Appendix for further information about Tuberculosis).

The Emergency Health Services Branch is turn has developed new standards for respiratory protective wear such that **Ontario ambulance services are now required to carry N95 respirators**. As a result, the Emergency Health Services Branch has developed this training course to advise ambulance personnel on how to effectively utilize the N95 respirator.

This training course is based on the 3M 1860 N95 particulate respirator that is currently available at the Ontario Government Pharmacy. If the ambulance chooses to use another brand of respirator, they are required to comply with the minimum requirements as per the *Provincial Equipment Standards for Ontario Ambulance Services*. For additional information about Ambulance Service Operators' Responsibilities, see Appendix for details.

Background

It is important to note that **infectious TB particles are one to five microns in size**[1]. Although **surgical masks** are effective in decreasing aerosolization of exhaled infectious particles, they effectively **filter less than 50% of inhaled particles** that are **one to five microns in size** and have marked leakage **because of loose facial seals**. Thus **surgical masks may not prevent the inhalation of droplet nuclei**[2].

It has been determined that the **N95 respirator is more suitable for protecting the health care worker from inhaling such droplet nuclei**. This type of respirator is **designed to minimize wearer exposure to certain airborne particles in a size range of 0.1 to > 10.0 microns** (as stated on the 3M 1860 N95 package). See Appendix for more details regarding the N95 respirator and (NIOSH).

[1] Canada Communicable Disease Report p. 27
[2] Canada Communicable Disease Report p. 28

Definition

Some of the documents related to personal respiratory protection use wither the term *respirator* and/or *mask*. In this document, the term *respirator* is to be used. For purposes of this document, a respirator is defined as a protective face piece hood or helmet that is designed to protect the wearer against a variety of harmful airborne agents.

Description

The N95 respirator meets the minimum requirements as per the ***Provincial Equipment Standards for Ontario Ambulance Services, Standard #L2-155*** (version 1.1, Spring 2000). It must:

- **Be constructed of a latex free material;**
- **Be disposable;**
- **Have an adjustable nose piece and an attachment strap;**
- **Be fluid resistant to splash and splatter of blood and infectious materials;**
- **Fit a wide range of face sizes;**
  [see note below]
- **Have a filter efficiency level of 95% or greater against particulate aerosols free of oil;**
- **Minimize wearer exposure to airborne particles in a size range of .1 to >10 microns [note that infectious TB particles are one to five microns in size]**
- **Complies with National Institute of Safety and Health (NIOSH) Standard 42 CFR 84 or better.**

When to use the Respirator

Listed below are situations when ambulance personnel should wear the N95 respirator.

- **When sharing sir space with a patient with suspected or confirmed infections TB**. E.g. when Paramedic/EMA is:

  - In contact with a patient with signs and symptoms that suggest infectious TB (e.g. during ambulance transport or transport in protective custody);

  - Entering a room where a patient with suspected or confirmed infectious TB is being isolated;

  - Appropriate ventilation is not available and the patient's signs and symptoms suggest a high potential for infectious TB;

  - The patient is potentially infectious, has a productive cough, and is unable to cover coughs;

  - In contact with a patient with suspected or confirmed infectious TB who is undergoing a procedure that is likely to produce aerosolized infectious particles or to result in coughing or copious sputum production, even if appropriate ventilation is in place.

When to use the Respirator (continued)

- **When there is a risk that the emergency service worker may be splashed with blood or body fluids.**

- **When caring for a patient with any other communicable disease where a respirator/mask is required**. Such a communicable disease may include but not be limited to viral hemorrhagic fevers.

NOTE: **Patients with suspected or confirmed infectious TB should use surgical masks** (or a more efficient mask that does not have an expiratory valve) during transport or **when they are required to leave the isolation room**. DO NOT mask patient if contraindicated e.g. difficulty breathing, patient anxiety.

WARNING

- **This respirator helps protect against certain particulate contaminates but does not eliminate exposure to or the risk of contracting any disease or infection**. MISUSE may result in sickness or death.

- **Replace and discard the respirator immediately if it:**

  - **Becomes contaminated with blood or body fluids;**
  - **Soiled and/or;**
  - **Physically damaged or wet.**

- **If breathing becomes difficult, replace and discard the respirator.**

Fitting the Respirator

Ambulance personnel must know how to effectively wear the respirator to ensure a tight facial seal. The user must ensure there is no interference with the face and respirator seal.

NOTE: For the mask to filter out droplet nuclei**, the air must pass through and not around the mask**. When gaps are present between the face and mask resulting in a poor facial seal, air will preferentially flow through the gasps and bypass the mask filter[3].

Fit Testing Methods

There are a variety of fit-testing methods. The adequacy of a facial seal may be determined by:

- Formal fit-tested methods (e.g. saccharin testing). See the document, **Health Care Respirator Training Program, 3M Health Care** for details.

- Informal testing methods (e.g. fit check).

Selecting the Size

Prior to initial use,

- **Select a respirator that seems to provide the best fit**. For example, the manufacturer 3M currently provides small, regular and large sizes.

- **Conduct a *face fit check* to ensure the size or make is appropriate** – as per the instructions (to follow).

Facial Hair (e.g. beards and sideburns)

If the employee has facial hair e.g. beard and sideburns,

- **He is encouraged to ensure all facial hair that may interfere with the respirator and face seal is removed prior to commencing any shift**. In some cases, an employee with a well trimmed beard who is able to consistently pass a *face fit check* may not need to shave in the area of the face mask seal at all.

NOTE: POOR FACIAL SEAL HAS BEEN DOCUMENTED IN INDIVIDUALS WITH FULL BEARDS[4]. If the EMA/paramedic is wearing the respirator for purposes of protecting themselves from disease transmission, there may be a higher risk of disease transmission for ambulance personnel with facial hair as the fit might not be as tight as the facial hair interferes with the sealing surface of the face piece and the face.

[3]Canada Communicable Disease Report p. 27
[4]Canada Communicable Disease Report p. 28

Eyewear

If the employee wears eyewear,

- **Ensure the eyewear is worn in a manner that does not interfere with the face and respirator seal**. Examples of such eyewear include corrective glasses, goggles, or other personal protective equipment.

Physical Condition Changes

If there are changes in the user's physical condition that could affect respirator fir.

- **The user may have to change the size or make of the respirator**. Examples of physical condition changes include the following:

  - Facial scarring;

  - Dental changes;

  - Cosmetic surgery;

  - An obvious change in body weight.

Trouble Getting Proper Fit

If an employee has a facial structure such that he/she is having trouble getting a proper fitting respirator,

- **Consider another size or different manufacturer**. Because of the variability in facial structure in the Canadian population, more that one size, make or model of mask may need to be provided to ensure that a properly fitting mask is available for all users. Respirators may vary is size from manufacturer to manufacturer. Also, users may be able to get a better fit by trying a respirator made by another manufacturer. Employers must help employees find a suitable respirator. Even for the same individual, fluctuations in weight may affect the face and respirator and alter respirator fit.

Recommended Procedures for Donning and Removing the Respirator

Donning and Removing the Respirator

Please note the "Wear It Right" photograph instruction sheet on the next page.

NOTE: These respirators are intended for single use for ambulance personnel purposes.

Prior to donning the respirator,

- **Inspect the outside of the filter. If it is damaged or soiled, it should be replaces.**

To don the respirator (to be follow each time the product is worn);

1. **Cup the respirator in your hand** with the nosepiece at fingertips, allowing the headbands to hang freely below the hand.

2. **Position the respirator under your chin** with nosepiece up.

3. **Pull the strap over your head so it rests high on the back of head**, while continuing to hold the respirator in place.

4. **Pull the bottom strap over your head and position it around the neck below the ears**, while continuing to hold the respirator firmly in place. Untwist the straps. Position the respirator low on you nose.

5. **Using two hands, mold the nosepiece to the shape of your nose** be pushing inward while moving your fingertips down both sides of the nosepiece. NOTE: Pinching the nosepiece using only one hand may result in less effective respiratory performance.

6. Conduct a **POSITIVE PRESSURE FIT CHECK**. The respirator seal must be checked before each use. Ensure that the respirator is properly situated on the face and is providing a face to respirator seal by doing the following:

    - **Place both hands completely over the respirator and exhale**. While performing this step, be careful not to disturbed the respirator's position

    - **If air leaks around your nose, adjust the nosepiece** as described in step 5.

    - **If air leaks at respirator edges adjust the straps back along the sides of your head**

    - **If an adjustment is made, perform a fit check again.**

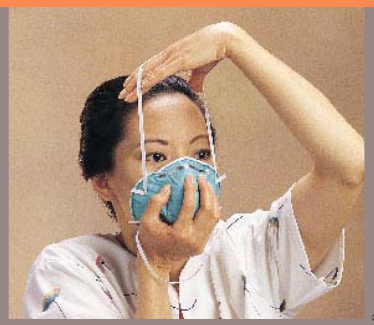
Wear It Right 3M Respirators

3M™ 1860/1860S Health Care N95 Particulate Respirator and Surgical Mask

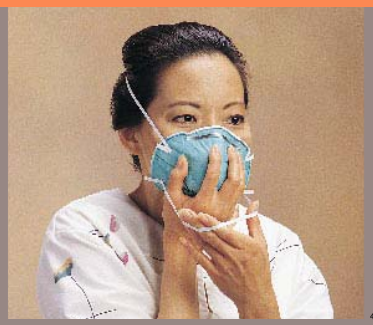
APPLICATION:

1 Cup the respirator in your hand with the nosepiece at fingertips, allowing the head straps to hang freely below hand.

2 Position the respirator under your chin with the nosepiece up.



3 While holding the respirator in place, pull the top strap over your head so it rests high on the back of your head.



4 While continuing to hold the respirator firmly in place, pull the bottom strap over your head and position it around your neck, below your ears. Untwist the straps. Position the respirator low on your nose.

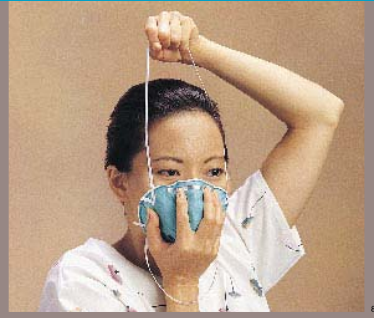
5 Using both hands, mold the nosepiece to the shape of your nose by pushing inward while moving your fingertips down both sides of the nosepiece. **Note: Always use two hands when molding nosepiece. Pinching with one hand may result in improper fit and less effective respirator performance.**

POSITIVE PRESSURE FIT CHECK:

6 The respirator seal must be checked before each use. To perform the fit check, place both hands completely over the respirator, being careful not to disturb the position, and exhale sharply. If air leaks around your nose, adjust the nosepiece as described in step 5. If air leaks at respirator edges, adjust the straps back along the sides of your head. Perform fit check again if an adjustment is made. If you cannot achieve a proper fit, see your supervisor. Do not enter area requiring respirator use.

REMOVAL:

1 Hold the respirator in your hand to maintain position on face. Pull bottom strap over head.



2 Still holding respirator in position, pull top strap over head.

3 Remove respirator from face and store or discard according to your facility's policy.

⚠ WARNING

This respirator helps protect against certain particulate contaminants but does not eliminate exposure to or risk of contracting disease or infection. Misuse may result in sickness or death. For proper use, see your supervisor or call 3M Occupational Health and Environmental Safety Division Technical Service at 1-800-243-4630.

3M Health Care
3M Center, Building 275-4E-01
St. Paul, MN 55144-1000
USA
1-800-228-3957

3M Canada, Inc.
Post Office Box 5757
London, Ontario N6A 4T1
Canada
1-800-563-2921

Recycled Paper
40% pre-consumer
10% post-consumer

Printed in U.S.A.
H.I. 4509

3M Health Care

To remove the respirator:

1. Cup the respirator in your hand to maintain the position on your face. Pull the bottom strap over your head.

2. While still holding the respirator in position, pull the top strap over your head.

3. Remove the respirator from your face and discard it according to local infectious waste policies and practices.

Storage and Maintenance

When storing the respirators, do the following:

- **Use protective devices**. Ensure the respirators are protected from contamination, dust, sunlight, extreme temperatures, excessive moisture and damaging chemicals and deformation. Consider storing the respirators in the box they came with as the box is clearly marked and the respirator information is contained on the box for easy reference. Other protective devices to consider include individual storage bins, compartments and/or covers.

- **Place the respirators in a location readily accessible to all potential users.**

- **Clearly mark the protective devices indicating it contains a respirator(s).**

Tuberculosis

Most of the following excerpts are taken from the document, "Preventing and Assessing Occupational Exposures to Selected Communicable Diseases, An Information Manual for Designated Officers", Nov. 1994.

General Information

Bacteria called mycobacterium tuberculosis cause tuberculosis (TB). The bacteria are carried in the respiratory system of infected people and can be spread in respiratory droplets from a person coughing, sneezing, or even talking. The droplets can survive suspended in the air for several minutes.

Transmission

TB is not a highly infectious disease. To be infected, people usually have to be exposed frequently over a long period of time to someone with TB:

- Who is not receiving treatment;
- Whose sputum contains TB bacteria and;
- Who is coughing.

Infection occurs when the person inhales the airborne and the bacteria takes hold and grows in the person's lungs. The bacteria are not spread through sharing dishes, drinking glasses or other objects.

In an emergency situation, emergency service workers are at greatest risk of exposure to TB through:

- Giving mouth-to-mouth resuscitation;
- Close and prolonged contact with someone who is coughing uncontrollably – particularly in a confined or closed space, such as a car or ambulance, where there is poor air circulation;
- Contact with fellow workers who may unknowingly be infected with TB. Then the infected worker coughs, sneezes and speaks at close range with a co-worker – particularly in a car or an office with poor ventilation – there is a risk of exposure to the bacteria.

Symptoms

Symptoms of active TB in the lungs include cough, fever, sweating and weight loss. It takes approximately four to 12 weeks after a worker is exposed to TB for a skin test or chest X-ray to show sighs of infection.

Prevention/Treatment

Emergency service workers who are exposed to people known or suspected to have TB can prevent transmission by using appropriate precautions as advised by Infection Control Officers. Other sources of direction include the ambulance service management and the Participant's Guide of the training program, Preventing and Assessing Occupational Exposures to Selected Communicable Diseases for Emergency Medical Attendants

For example, when transporting someone with active TB, the emergency service workers should ask the person to cover his/her mouth with a tissue when coughing and to put used tissues into a covered container. Note that ambulance personnel are required to wear the N95 respirator.

Physicians use a combination of drugs over a period of six to nine months to treat active tuberculosis. This treatment is effective and will cure TB in most cases. Most patients become noninfectious within three weeks of beginning treatment. If a worker suspects that he/she has been infected with tuberculosis, he/she should have a skin test and be examined by a physician. Anyone who reacts to the skin test (i.e. is infected) and who has not developed active TB can be given medication that will prevent TB from developing.

Personal powered respirators are generally not recommended for the care of the patients with TB.

Additional Information About the Respirators

About NIOSH Regulation and Particulate Respirator Categories

The following excerpts are taken from the document, "NIOSH Guide to the Selection and Use of Particulate Respirators (Certified Under 42 CFR 84)" p.1-2, to highlight the new categories of particulate respirators certified by NIOSH. It is presented here primarily for interest purposes.

"NIOSH has developed a new set of regulation in 42 CFR 84 (also referred to as "Part 84") for testing and certifying nonpowered, air purifying, particulate-filter respirators. The new Part 84 respirators have passed a more demanding certification test than the old respirators (e.g. dust and mist [DM], dust, fume, and mist [DFM], spray paint, pesticide, ect.) certified under 30 CFR 11 (also referred to as "Part 11"). Changes in the new regulation involve only nonpowered, air purifying, particulate-filter respirators.

The new Part 84 regulations provide for nine classes of filters (three levels of filter efficiency +, each with three categories of resistance to filter efficiency degradation ++). The three categories of resistance to filter efficiency degradation are labeled N, R, and P. The class of filter marked N95 would mean an N-series that is at least 95% efficient. Chemical cartridges that include particulate filter elements will carry a similar marking that pertains only to the particulate filter element.

The selection of N-, R- and P- series filters depends on the presence or absence of oil particles. If no oil particles are present in the work environment, use a filter of any series (i.e., N-, R-, or P-series); if oil particles (e.g. lubricants, cutting fluids, glycerin, ect.) are present use an R- or P- series filter (note: N- series filters cannot be used if oil particles are present). If oil particles are present and the filter is to be used for note than one work shift, use only a P-series filter. To help remember the filter series: N for NOT resistant to oil, R for resistant to oil, P for oil proof.

This selection of filter efficiency (i.e. 95%, 99%, or 99.7%) depends on how much filter leakage can be accepted. Higher filter efficiency means lower filter leakage. The choice of face piece depends on the level of protection needed, that is the assigned protection factor (APF) needed. Personal powered respirators are generally not recommended for the care of patients with TB."

An undated list of NIOSH certified respirators can be obtained:

- by writing to Chief, Certification and Quality assurance Branch, Division of Safety Research NIOSH, 1095 Willowdale Road, Morgantown, West Virginia, 26505-2888, USA

- on the Internet at http://www.cdc.gov/niosh/homepage.html

+ Filter efficiency is the stated percentage of particles removed from the air
++ Filter efficiency degradation is defined as a lowering of filter efficiency or a reduction in the ability of the filter to remove particles as a result of workplace exposure

Technical Information

For questions regarding the 3M disposable particulate respirators direct them to the 3M Occupational Health and Environment Safety technical service line. In Canada, call 1-800-563-2921.

For questions regarding the Health Care Respirator Training Program, call 1-800-441-1922.

Ambulance Service Operator Responsibilities

The ambulance service operator in consultation with the Joint Health and Safety Committee, or representative are required to do the following:

- **Develop policies and procedures on the use of the respiratory protection mask including the following:**
  - When the mask is to be worn
  - How to wear the mask
  - How to ensure a proper fit
  - Storing and disposing of respirators.
- **Provide training to all employees requires to use the respirators prior to their initial use and more often if necessary** (e.g. new types of respirators are used, inadequacies in the employee's knowledge or use indicates need).

If the ambulance service selects another respirator other than the 3M 1860 N95 particulate respirator, they are required to:

- **Select a particulate respirator that complies with the current *Provincial Equipment Standards for Ontario Ambulance Services*.**
- **Develop a training program specific for the N95 respirator that has been selected**. The training program must be comprehensive, understandable and should help the learner to easily remember the information. The following information must be incorporates (as a minimum):
  - Reasons why it is necessary to use the respirator
  - Capabilities and limitations of the respirator
  - When the respirator should be used
  - Procedures for applying the respirator e.g. how to inspect, put on and remove, use ad check the seals. Reasons why improper fit can compromise its protective effect.
  - Storage & maintenance and reasons why improper storage and maintenance can compromise protective effect.

There are a number of factors that the ambulance service owner/operator should consider when selecting a respirator.

- **Fit and comfort**. User fit and comfort are important factors to consider. For the mask to filter out droplet nuclei, the air must pass through and not around the mask. When gaps are present between the face and the mask resulting in a poor facial seal, air will preferentially flow through the gaps and bypass the mask filter.

- **Wearer acceptance**. When selecting the respirator, ambulance personnel should be consulted about the following factors:

  - Comfort

  - Interference with communication

  - Resistance to breathing

  - Fatigue

  - Interference with vision

  - Interference with job performance and

  - Confidence with the device's effectiveness.

References

3M

- Health Care Respirator Training Program, 3M, USA., 1995.

- 3M 1860 Health care Particulate Respirator Type N95, Questions and Answers, 3M Health Care, USA

- Poster – Wear it Right, 3M Respirators, 3M Health Care, USA., 1997.

- Video – Health Care Respirator Training Program, 3M Health Care, USA., 1993

Health Canada

- ***Guidelines for Preventing the Transmission of Tuberculosis is Canada Health Care Facilities and Other Institutional Settings***, Canada Communicable Disease Report – Supplement, Health Canada, Vol. 22S1, April 1996.

- ***Preventing the Transmission of Bloodborne Pathogens in Health Care and Public Service Settings***, Canada Communicable Disease Report – Supplement, Health Canada, Vol. 23S3, May 1997.

Ontario Ministry of Health/Emergency Health Services Branch

- ***Provincial Equipment Standards for Ontario Ambulance Services***, Version 1.1, Ontario Ministry of Health and Long-Term Care, Summer 2000.

- ***Preventing and Assessing Occupational Exposures to Selected Communicable Diseases. An Information Manual for Designated Officers***, Ontario Ministry of Health, Nov. 1994.

- ***Preventing and Assessing Occupational Exposures to Selected Communicable Diseases for Emergency Medical Attendants, Instructor' Guide***, Emergency Health Services, Ontario Ministry of Health, Jan. 1996.

- ***Preventing and Assessing Occupational Exposures to Selected Communicable Diseases for Emergency Medical Attendants, Participant's Guide***, Emergency Health Services, Ontario Ministry of Health, Jan. 1996.

U.S.A.

- ***Occupational Exposure to Tuberculosis; Proposed Rule, Federal Register, 29 CFR Part 1910***, Occupational Safety and Health Administration, Department of Labor, Fri. Oct. 17, 1997

- ***Respiratory Protection; Final Rude, Federal Register, 29 CFR Part 1910 and 1926***, Occupational Safety and Health Administration, Department of Labor, Thurs. Jan. 8, 1998.

- ***Inquiry of beards, respiratory use, and fit testing of respirators*** (Standard Number: 1910.134), Occupational Safety and Health Administration, U.S. Department of Labor, OCIS (OSHA Computerized Information System) Information Date: Oct. 3, 1996

- ***OSHA Efforts to Control Worker Exposure to Tuberculosis*** (Standard Number: 1910.1001; 1960.1). Occupational Safety and Health Administration, U.S. Department of Labor, OCIS (OSHA Computerized Information System), Information Date: Nov. 20, 1995

- ***Respiratory Protection***, Occupational Safety and Health Administration, U.S. Department of Labor, 1997

- ***NIOSH Guide to the Selection and Use of Particulate Respirators***, Certified Under 42 CFR 84, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, Jan. 1996

- ***29 CFR Parts 1910 and 1926, Respiratory Protection; Final Rule***, Occupational Safety and Health Administration, Department of Labor, Jan. 8, 1998

- ***Major Requirements of OSHA's Respiratory Protection Standard 29 CFR 1910.134***, OSHA Office of Training and Education, March 1998

- Letter from Joseph A. Dear, re: OSHA efforts to control worker exposure to TB., OSHA, U.S. Department of Labor, Nov. 20, 1995

- Letter from John B. Miles, Jr. re: Inquiry on beards, respirator use, and fit testing of respirators, OSHA, U.S. Department of Labor, Oct. 3, 1996

- Letter from John B. Miles, Jr. re: The OSHA interpretation of respiratory protection requirements with regards to tuberculosis (TB) exposure, OSHA, U.S. Department of Labor, Feb. 5, 1996.

Other

- **Tuberculosis**, Canadian Center for Occupational Health and Safety, OSH Answers, Information Date: May 15, 1998.

EMA Training Package

Safety Eyewear Purchase

February 1997

Version 1.0

Emergency Health Services Branch
Ministry of Health and Long-Term Care

EMA Information

Safety Eyewear

Learning Objectives

Given: One pair of safety eyewear (either the Cricket 9180 or Astro OTG 3001), a protective case, product description and features, adjustment instructions, OH&S Use Guidelines, and cleaning instructions.

The Learner will:

1. Review the product description and features.
2. Review the steps for safety eyewear adjustment.
3. Review the OH&S Guidelines for use.
4. Review the cleaning procedures.
5. Practice the sizing adjustments that can be made on the eyewear given.

To the extent that the learner is able to:

1. Relate at least 3 scenarios indicating the use of safety eyewear.
2. Label the components of the safety eyewear.
3. Demonstrate proper adjustment skills on the safety eyewear given.
4. List the appropriate steps, and products used to clean the eyewear.
5. List at least 3 features of the safety eyewear.

As evaluated by:

1. The learner.
2. Skills checklist.

Delivered by:

1. Service Instructor in-station visit OR
2. Supervisor in-station visit.

Background

Last year, a safety eyewear questionnaire was distributed to ten different services across the province. All services surveyed used goggles – and although many felt they offered adequate protection, it was suggested that safety glasses may be more appropriate for EMAs.

A field trial of four (4) different types of safety glasses was conducted, and the information gathered from that trial enabled the Branch to proceed with the Tender process.

Introduction

Included in this package is information on both types of safety eyewear that will be issued (one pair per EMA). IT also includes details on special features, OH&S Guidelines for use of the safety eyewear, and cleaning instructions. EMAs are required to review this handout prior to using the safety eyewear. A Skills Check Sheet has been included in this package – your Service Instructor or Supervisor will be conducting an in-station visit to review this with you.

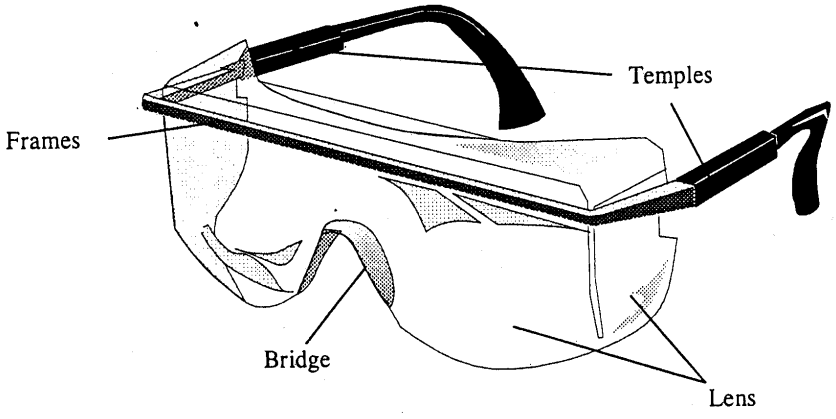
The two types of safety eyewear that will be issued are:

Cricket 9180 for non-prescription lens wearers
Astro OTG 3001 (Over the Glass) – larger pair to fit directly over prescription eyewear.

Please note: Safety goggles currently used will remain on the vehicles (2 each) in the event of eyewear loss or damage prior to replacement. Students may also require the use of the goggles in a situation where safety eyewear is required.

Product Description

The selected eyewear have features that include: VU protection, anti-scratch, anti-fog, and anti-static coatings. Both types of safety eyewear have adjustable temples, and the Cricket 9180 has adjustment temple angles. All of these characteristics are available to provide greater comfort and protection.



Eyewear Features	Explanation
UV Protection	Both types of safety eyewear have some degree of UVA and UVB protection. This protection level is approximately 99% UVA and 60% UVB. An additional coating was added to provide both UVA and UVB protection at 99%.
Anti-fog coating	This coating will simultaneously absorb and release moisture, consequently the lens will resist fogging and will increase vision.
Anti-scratch coating	Decreases the wear and tear on the lens during normal use. This will in turn increase the life of the lens.
Anti-static coating	Reduces the amount of dust and small particles which will adhere to the lens surface.
Nose bridge	Universal size allows for optimal size and fit.
Lens	Impact resistant polycarbonate lens are optically correct to allow for a wide viewing work area/
Frames	Impact resistant nylon frames allow for sturdy, durable, long-lasting frames.
Comfort cushions	Significantly improves comfort on the sensitive mastoid areas.
Frames position	Lens angle (on the Cricket 9180 only) and temple length can be adjusted, for improved fit and comfort.
Astro OTG	OTG (Over-the-glasses) safety eyewear provide comfortable coverage for prescription wearers.

Adjusting for proper fit

Upon receipt of the safety eyewear, follow the steps below to adjust the size to a proper fit.

1. Unfold the arms of safety eyewear (avoid placing fingers on the lens).
2. Place safety eyewear on face to identify areas where pressure, pinching or slipping are noted. If any of these problems are encountered, the safety eyewear frames must be adjusted.
3. To adjust the frames: Place one hand near the hinge point of the temples and the frames. Gently pull/push (with the other hand) the temple arm to the desired length. The temple length can be adjusted to one of 3 different positions (4 positions for the OTG) as noted by a click. Repeat this procedure on the other temple arm of safety eyewear.

Note: To keep the nose bridge portion of the safety eyewear from sliding down the nose, the temple arms must be snug to hold the safety eyewear to the face and bridge of the nose.

Adjusting for proper fit (continued)

4. Repeat adjustment procedures until maximum comfort and fit are achieved. If discomfort is noticed, re-adjust the safety eyewear.
5. Safety eyewear with lens angle adjustments can be adjusted by holding either side of the safety eyewear and tilting the lens until the desired angle is achieved.
6. After completing the adjustments, ensure that no pressure or pinch points are felt, the eyewear does not slip off bridge of nose, and peripheral vision is not impaired.
7. Remove eyewear from face, fold arms back towards lens and store in the protective case until required.

OH&S Guidelines for Use

The use of safety eyewear should be a mandatory part of your patient care activities. Situations in which EMAs will use the safety eyewear are as follows:

- Invasive procedures where there is a potential of body fluid exposure,
- Auto extrication, or any form of extrication where materials are being cut or shattered,
- On scene landing and take off of helicopters,
- Construction and quarry sites
- Industrial settings where safety eyewear is called for,
- Rural calls where traversing through dense foliage may be encountered,
- Severe weather conditions (high winds, hail, etc.),
- **Any situation that requires the use of a safety helmet.**

Cleaning of Eyewear

Fresh water and mild soap may be used to clean the safety eyewear. It is recommended that the safety eyewear be rinsed well wit fresh clean water and air dried. If air drying is not possible, pat dry with a clean soft tissue.

Important: Do not use hypochlorite solutions, alcohol, ammonia, alkaline cleaners, abrasive cleaning compound or solvents on any component of the eyewear, as the protective coatings may be damaged. Acetone-based products should be avoided, as it will permanently cloud and ruin the lens.

Safety Eyewear

Procedure for Use – Skills Checklist

Skill	Yes	No	Comments
Can relate at least 3 scenarios for the use of safety eyewear			
Label the safety eyewear components			
Demonstrated proper safety eyewear adjustment skills			
List the appropriate steps, and recommended products for cleaning the eyewear			
List at least 3 features of the eyewear given			

Deficient areas identified on the performance checklist were reviewed with the participant and the participants level of performance is acceptable.

Remedial Action: _____

_____

_____

_____

Instructor's Signature: _____

Participant Name: _____ EHS # _____

Participant Signature: _____ Date: _____