

Infection Prevention and Control (IPAC) Hub Congregate Living Organizations Webinar N95 Respirators

Presented by:

ESC IPAC Hub | GB IPAC Hub | HNHB IPAC Hub | SW IPAC Hub | WW IPAC Hub

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Ontario Health
West



Poll Questions

What area do you work in?

- A. Erie St. Clair (ESC)
- B. Grey Bruce (GB)
- C. Hamilton Niagara Haldimand Brant (HNHB)
- D. South West (SW)
- E. Waterloo Wellington (WW)

What setting do you practice in?

- A. Adult Developmental/Intervenor Services' Congregate Residential Programs
- B. Anti-Human Trafficking Residential Programs
- C. Assisted Living
- D. Children's Residences
- E. Indigenous Healing and Wellness Strategy Residential Programs
- F. Long-Term Care Home & Retirement Home
- G. Shelters & Supportive Housing
- H. Violence Against Women Shelters/Residential Programs
- I. Youth Justice Facilities and Open and Secure Custody Setting
- J. Other

What is your role in the setting you work in?

- A. Administrative
- B. Case Management
- C. Direct Care
- D. Infection Prevention and Control
- E. Health Professional
- F. Other





Agenda

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Item	Topic
1	Welcome Introductions
2	N95 Respirators: What, Why, When and How?
3	Fit Testing
4	Donning & Doffing
5	Seal Checks
6	Extended Use Strategies
7	Questions & Answers
8	Summary Wrap-Up





Review of N95 Respirator Use

What they are

Why they are used

When to use them

How they work

Types of Respirators



Non-powered air purifying (disposable)



Non-powered air purifying (reusable)



Powered air purifying respirator

NIOSH N95 Respirators

- The US National Institute of Occupational Safety and Health (NIOSH) is responsible for:
 - setting standards in the US related to occupational safety and health;
 - the certification of products against those standards, which come from 42CFR84 of US legislation.
- The NIOSH N95 respirator is one of those certified products.



N95 Respirator



Class	Efficiency
• N – Not Oil Resistant	• 95 %
• R – Oil Resistant	• 99%
• P – Oil Proof	• 100%

What is an N95 respirator?

- Special mask designed to protect the wearer from breathing in very small particles, which might contain viruses.
- It must fit tightly to the face so that most air is inhaled through the filter material.
- Designed to achieve a very close facial fit and very efficient filtration of airborne particles.
 - Edges of the respirator form a seal around the nose and mouth



What is an N95 respirator?

- N95 refers to the filtering efficiency of a respirator based on the percentage of small particulate they filter from the air when properly used.
- **To work the best way, N95 respirators must be specially fitted for each person who wears one** (this is called "fit-testing" and is usually done in a workplace where respirators are used).
 - “unfitted” refers to a respirator that does not require fit testing (KN95) or one that the user has not been fitted for.



Why do I need to wear a respirator?

- Historically, N95 Respirators were used by healthcare workers for contact with tuberculosis (TB), varicella (chicken pox), or measles.
 - These agents may be spread by **airborne transmission** and are expelled into the air when a person coughs, sneezes or talks.
 - They can travel long distances (> 2m).
- These diseases can damage the lungs, can cause serious illness, and are highly communicable.

Why do I need to wear a respirator?

- Recent updated Chief Medical Office Of Health directives now require an N95 respirator to be worn (in addition to gown, gloves, and eye protection) for **all workers providing direct care to or interacting with** a suspect or confirmed case of COVID-19.
 - interim due to uncertainty around the mechanisms of transmission of COVID-19 Omicron variant.
 - Used for cases placed in precautions as high risk contact, in an outbreak zone of the facility, or recently transferred from a facility in outbreak.



Photo credit: James Gathany

When do I need to wear an N95 Respirator?

- N95s are required during aerosol generating medical procedures (AGMs) because during these procedures fine aerosols are created that may not be filtered by a regular procedure mask.
- An N95 will provide you with the best protection possible.

How does the respirator work?

- The respirator filters the air before it is inhaled by the person wearing the respirator.
- It is made of fabric that has an electrostatic charge that acts to trap particles, preventing filter penetration.

How does the respirator work?

- For the mask to filter out droplet nuclei, the air must pass through and not around the mask.

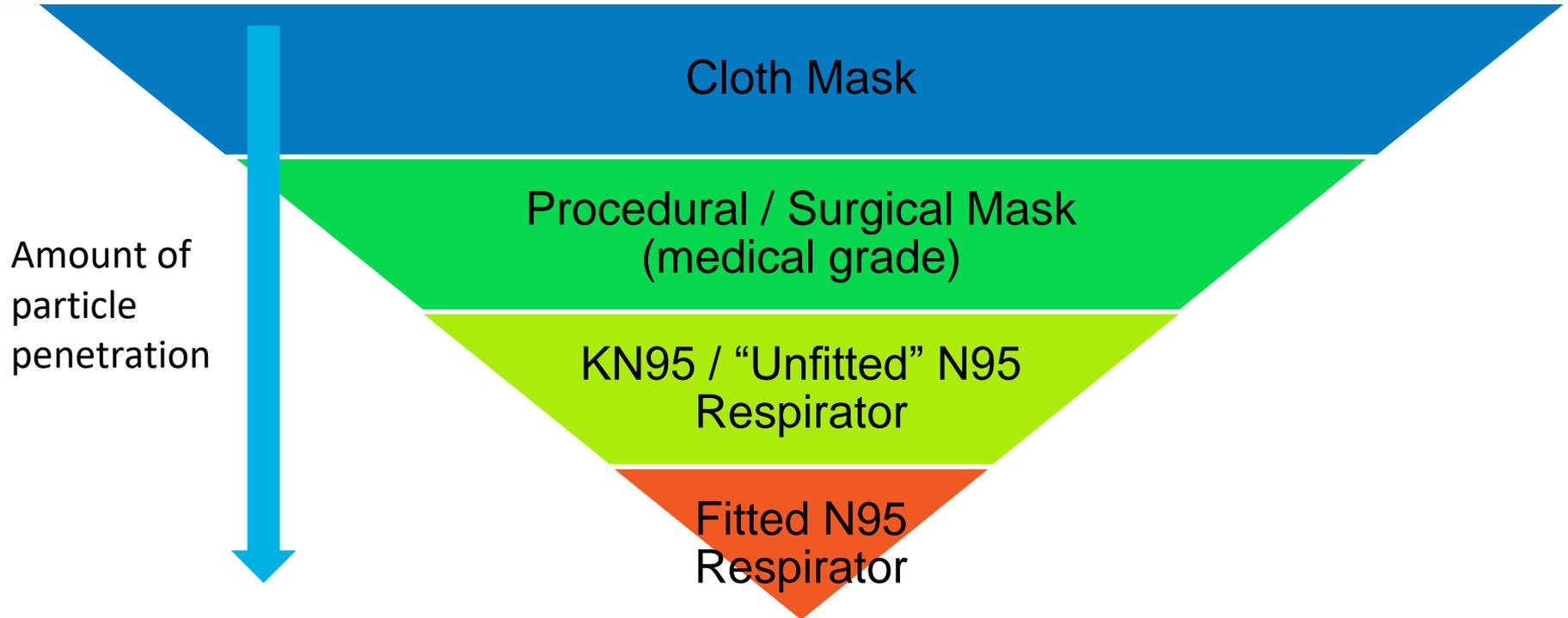


How does the respirator work?

- 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.



Various Masks and Particle Penetration





Poll Question

I know the process to get my staff fit tested within my organization.

- A. yes
- B. no

Which of the following statement best describes your organization/setting?

- A. We have a respiratory protection program in place with clear policy and procedure around the use of N95s
- B. We fit test our staff for N95s, but have yet to develop a respiratory protection program with clear policy and procedure
- C. We do not fit test for N95s because we are permitted to use N95s without being fitted
- D. Other



N95 Respirator Fit Testing

Why and when it is done
Responsibilities of Employers & Employees

Respiratory Protection Program

- A respiratory protection program is required for staff who will be required to wear an N95 respirator (Ministry of Labour, Training and Skills Development (MLTSD) requirement).
- The program must include:
 - a health assessment;
 - N95 respirator fit-testing;
 - training - proper use & how to perform a seal check.



Fit Testing

- Is required prior to using respirators to make sure that the respirator seals to the user's face properly.
- Should be carried out at least every **2 years** because the user may have to change the size or make of the respirator due to physical changes.
 - e.g. facial changes, piercings, weight loss/gain
- Wearer is required to perform a “**user-seal check**” each time the respirator is worn to check the respirator-to-face seal.



Quantitative vs. Qualitative Fit Testing

- **Quantitative fit testing** measures the effectiveness of a respirator's fit by numerically measuring the amount of leakage into the respirator.
 - PortaCount machine
- **Qualitative fit testing** is a pass/fail test that relies on the person's response to a test agent.
 - Saccharin/Bitter solution and hood



Fit Testing Kit



Fit Testing Considerations

- No eating/drinking/chewing gum 15 minutes prior to fit test.
- Must complete Medical Screening.
 - e.g. Pregnant workers, asthma, Chronic Obstructive Pulmonary Disease (COPD)
- Must be clean shaven where the respirator contacts the skin for fit testing and for use.



Fit Testing Considerations, Cont'd

- Clean shaven allows for short stubble or minimal facial hair growth that does not interfere with or prevent a seal.
 - Should not be more than a “5 o’clock shadow”
 - i.e. growth since shaving this morning
- Individuals with bona fide human rights reasons that cannot be clean shaven may need to be provided with Powered Air Purifying Respirator (PAPR) or other appropriate option.

Fit Testing Challenges

- Difficulty fitting into respirators available in facility.
 - Attempt to source a different size
 - Focus on sizes that have a more universal fit (e.g. 1870+)
- Staff cannot taste the sweet or bitter solutions
 - Have employee get a quantitative fit test



Preventing Skin Breakdown

- Ensure the respirator is well-fitting and comfortable to wear without too much friction or pressure on the skin
 - An ill-fitting or uncomfortable respirator may indicate a different brand or model of respirator would be more suitable
- Follow manufacturer's instructions for use for strap placement
 - Headbands can prevent excessive pressure against the skin and are usually on the crown of the head and behind the neck, not resting on ears

Preventing Skin Breakdown

- Take regular breaks when the respirator is doffed to relieve pressure on skin
- Complete facial skin care with a product intended to be used on the face to avoid irritation
- Apply moisturizers and lotions well in advance of respirator use to ensure any residual is absorbed
 - Follow manufacturer's instruction as lotion, cream, or ointment, including make-up residue could interfere with fit and seal of a respirator

Employer Responsibilities

- Provide fit testing every 2 years.
 - Make every attempt to get fitted for an appropriate respirator
 - If staff continue to fail both qualitative and quantitative fit tests then consider fitting to a reusable respirator
 - May use a reputable external vendor
- Keep records of the N95 respirators that each staff has been fitted for and ensure they are readily available.
- Provide education on the proper use of N95 respirators



Employee Responsibilities

- Know which N95 respirator(s) they have been fitted to and where they are located.
 - N95 are not interchangeable, and are not to be modified
- Use the fitted N95 respirator(s) when indicated.
- Complete regular education on the proper use of N95s.
- Report to employer if they are having difficulty obtaining a seal with their fitted N95.

Fit Testing Services

- For a list of companies that provide fit testing or fit test trainer testing refer to the HMMS website under resources:
 - [Regional COVID-19 Portal \(hmmscovid19.ca\)](https://hmmscovid19.ca)
- Note: Ministry of Children, Community and Social Services (MCCSS)-funded and licensed congregate living settings can also contact their MCCSS IPAC Champion for information, support and guidance on fit testing



General Donning / Doffing Instructions for the N95

The following instructions must be followed
each time the respirator is worn

Before you begin...

- Before donning an N95:
 - ✓ Perform hand hygiene.
 - ✓ Inspect the respirator to ensure the integrity of the components, including the shell, straps, and metal nose-clip.

Donning Instructions

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



Donning Instructions

- 2. Position the respirator under your chin
- The nosepiece should be over the bridge of your nose



Donning Instructions

- 3. Pull the top strap over your head so it rests high on the back of your head



Donning Instructions

- 4. Pull the bottom strap over your head and position it around neck below ears
- Make sure the bottom strap is under your hair
- **Tip – use a mirror!**



Donning Instructions

- 5. Using both hands, mold the metal nosepiece (if present) to the shape of your nose by pushing inward while moving fingertips down both sides of the nosepiece



User Seal Check

6. The User Seal Check

- Place both hands over the respirator without disturbing its position
- The respirator seal **MUST** be checked before each use



Two Types of Seal Checks

1. Negative Pressure Seal Check

- With the respirator securely in place inhale deeply
- The respirator should collapse slightly

2. Positive Pressure Seal Check

- Place both hands over the respirator without disturbing its position
- Exhale sharply
- Air should not leak around the respirator edges



How to Readjust Your N95?

- If air leaks around your nose, adjust the nosepiece
- If air leaks at the respirator edges, adjust the straps back along the sides of your head

How to Readjust Your N95? Cont'd

- If continued readjustment does not fix the air leak, try another respirator that you have been fitted for
 - same brand, or a different type if fitted to more than one
- If fit issues continue, escalate to manager/supervisor

Doffing the N95

To safely remove the N95:

While leaning forward:

1. Lift the bottom strap over your head first
2. Then lift the top strap
3. Lift away from face while holding the strap only
4. Discard in regular waste container



Special Considerations

- Staff that have a heart or lung disease or other health condition, may have trouble breathing through respirators and should talk with their doctor before using a respirator.
- Visitors should not be given N95 respirators for use since they have not been fit tested.
 - No added benefit over a well fitted medical grade mask



Poll Question

You are wearing an N95 respirator as extended use and remove it for a drink. What do you do ?

- A. Put it on a clean surface and don it when finished drinking
- B. Pull it under your chin
- C. Doff the respirator, discard it and obtain a new one
- D. Other



Extended Use Strategies

To preserve supply

Extended Use Strategies

- Refers to the practice of wearing the same N95 respirator for repeated close contact encounters with several different patients/residents/clients without removing the respirator between encounters
 - **Remove and discard** if **wet, contaminated, damaged, hard to breathe through**, at break times, or following an AGMP
 - N95 respirators should be discarded **immediately after being removed**
 - During extended use for N95 respirators, always change gloves and gown between patient/resident/client encounters
 - *Eye protection can also be used for multiple encounters*



Does wearing a mask over the N95 help to extend its use?

- Wearing a surgical mask or cloth covering over an N95, is not approved or recommended by NIOSH because it is not consistent with the conditions of the approval, therefore voiding the certification
- When protection against surface contamination is needed, Centers for Disease control and Prevention (CDC) recommends wearing a cleanable face shield over an N95 respirator

Link: <https://blogs.cdc.gov/niosh-science-blog/2020/06/16/covering-n95s/>



Other Key Points

- The following practices **are not recommended**:
 - Reprocessing (or sterilizing N95 respirators)
 - Much discussion and review in summer 2020, but not recommended
 - Using the same respirator for multiple days
- **RE-USE – should only be used when there is a supply crisis**
 - Only consider after exhausting all other alternatives, and consulting with the local PHU





Questions and Answers



Summary | Wrap-Up

Key Points

- Ensure staff:
 - ✓ Know their N95 size and where to find it.
 - ✓ Know how to properly don and doff their N95.
 - ✓ Know how to perform a user seal check.
- Always take care when removing PPE as this is when self-contamination may occur.
- Need to discard after use, it is a disposable piece of PPE.

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Resources

Videos and Other Resources

- [Putting on Flatfold N95 Respirator](#)
- [Taking off Flatfold N95 Respirator](#)
- [Putting on Cone N95 Respirator](#)
- [Taking off Cone N95 Respirator](#)
- [How to Use Your N95 Respirator \(cdc.gov\)](#)
- [Skin Irritation from Prolonged Use of Tight-Fitting Respirators](#)
[| Blogs | CDC](#)

