3M Science. Applied to Life.™

Let's focus on what's important.

3M™ Personal Protective Solutions for Healthcare Professionals

Protected today. Prepared for tomorrow.

Healthcare facilities have multiple departments and functions that can be exposed to potential health and safety hazards.

Workers in healthcare facilities may encounter a broad range of hazards, requiring a variety of PPE to help protect them so that they can provide care, support care delivery and maintain facility operations. 3M is here to provide guidance on potential hazards that may pose risks for workers and help with selection and use of different types of PPE in healthcare environments.

Table of contents

Direct care for patients with suspected or confirmed infectious pathogens

Healthcare workers that provide direct care to patients may potentially be exposed to a variety of infectious pathogens that can be transmitted to workers and other patients. These agents may be transmitted via direct or indirect contact, droplet or airborne routes.[1] Emerging infectious diseases can pose challenges to protecting workers and patients as prevention and control recommendations may not be immediately available.

Handling and administration of hazardous drugs and drug neutralization

Hazardous drugs can cause cancer, reproductive issues and damage to organs or DNA.[2] Potential routes of exposure include absorption through the skin and/or mucosa, inhalation of dusts, aerosols or vapors, accidental injection and unintentional ingestion.[3]

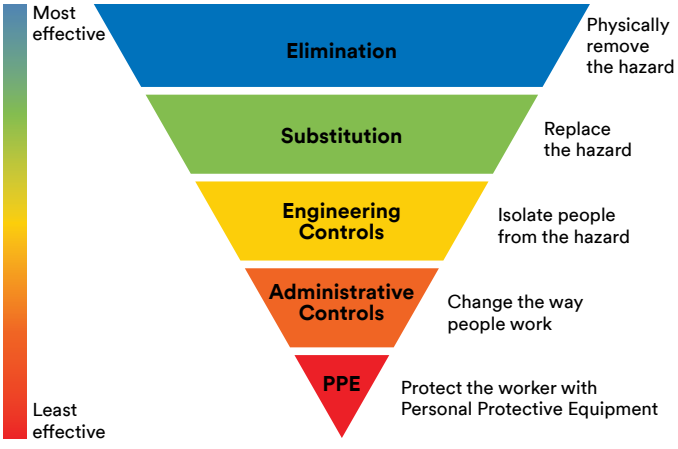
Disinfection and chemical use

Healthcare Associated Infections (HAI) and cross contamination are a common concern for healthcare organizations. In order to reduce the risk of transmission of infectious agents, potentially hazardous chemicals are used to disinfect work surfaces and the healthcare environment, and to disinfect and sterilize instruments. Potentially hazardous chemicals may be also used in laboratories and when handling tissue specimens.

Hierarchy of Controls[4]

Controlling exposures to hazards in the healthcare environment is essential to help protect workers. Using the hierarchy of controls can help remove hazards when possible or reduce the risk of exposure and potential for illness or injury. The hierarchy prioritizes controls that are the most effective beginning with elimination to those that are less protective. In healthcare settings, elimination and substitution of hazards is not always possible.

PPE should be used in conjunction with other controls to be most effective or used in situations when other controls are not feasible.



[1] Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee, 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html

[2] OSHA, Joint Commission, NIOSH [2011] Letter to US Hospitals highlighting work precautions for handling hazardous drugs, April 4, 2011.

[3] USP General Chapter <800> Hazardous Drugs- Handling in Healthcare Settings, 2020. Retrieved from www.usp.org.

[4] Centers for Disease Control and Prevention, The National Institute for Occupational Safety and Health (NIOSH). Hierarchy of Controls. https://www.cdc.gov/niosh/topics/hierarchy/default.html.

The 3M science of safety: protecting people, improving lives.

From helping to identify potential hazards to providing education and training, 3M can help solve a variety of worker health and safety challenges.

3M can help you with understanding best practices to help reduce the risk of exposure, including differences between masks and filtering facepiece respirators,
the importance of fit, and respirators such as powered air purifying respirators (PAPR) that can provide a higher level of respiratory protection, and can be an alternative for staff when a tight-fitting respirator may not be appropriate.

In addition to quality PPE, we provide a wide range of resources and solutions you need each step of the way.

Health and safety knowledge:

- Deep knowledge of workplace hazards combined with an understanding of standards and regulations related to worker health and safety
- Global leader in respiratory protection.
- Various resources and tools to help establish and run a successful workplace Respiratory Protection Program.

Respirator fit knowledge and support

- Education on the importance of respirator fit.
- Help with respirator selection based on fit.
- Resources for qualitative and quantitative fit testing as required by OSHA.

Training and education

- From digital learning modules to in-person onsite training support and a suite of technical resources regarding best practices and alignment to standards and regulations.

Standards and regulatory advancement

- Team dedicated to advancing standards and regulations that are focused on helping to improve worker safety and health globally.

The science behind respiratory protection.

Masks versus filtering facepiece respirators: understand the difference.

Masks and filtering facepiece respirators are very different in fit, intended use, testing and approval. Procedural and surgical masks are not designed to help reduce the wearer's exposure to airborne hazards. It is important to understand the differences because your safety is essential in order to deliver care to patients.

Filtering Facepiece Respirator: Tight-fitting, designed to form a seal around the nose and mouth.

Procedural/Surgical Mask: Loose-fitting, does not form a seal to the face, allowing unfiltered air to flow around gaps at the edge of the mask.

	Surgical N95	Standard N95	Surgical Mask
Fit	Tight, designed to form a seal around the nose and mouth	Tight, designed to form a seal around the nose and mouth	Loose, does not form a seal to the face, allowing unfiltered air to flow around gaps at mask edge
Fit testing required	✓	✓	
Intended for use as respiratory protection. Helps reduce particles inhaled by the wearer, with at least 95% filtration efficiency	✓	✓	
Helps reduce particles expelled by the wearer	✓	✓	✓
Fluid resistant	✓		✓
Approvals	NIOSH Approved	NIOSH Approved	

The importance of fit.

Recent events have raised important questions about respiratory protection. One thing is certain: to provide the expected protection, a tight fitting respirator needs to seal properly to the wearer's face. But what exactly does that mean and how can we tell? From help with fit testing to training and resources, 3M is here to help answer those questions.

3M is your reliable partner when it comes to helping you understand the importance of respirator fit.

When you focus on fit, you help give your employees greater confidence in their respiratory protection. If a worker's respirator doesn't seal properly, there's no certainty it's providing the expected protection.

3M has been an industry leader in respiratory protection for decades, with a longstanding focus on fit. We're here to help you when it comes to:

Education and training on respirator use

- Why is it so important to fit test? A respirator needs to fit and seal to a wearer's face. Otherwise, contaminated air can pass around the respirator and into the wearer's breathing zone.
- Proper respirator fit is critical for tight-fitting respirators to work as intended to help reduce exposure to airborne hazards.
- Facial hair can interfere with the seal of a tight-fitting respirator to the face. OSHA states that tight-fitting respirators are not permitted to be worn by employees who have facial hair that comes between the sealing surface of the facepiece and the face.[1]

Choosing the appropriate respiratory protection for the job

- Within your healthcare facility, workers may be exposed to a range of airborne hazards depending on the situation. 3M offers a variety of respirators to help reduce employee exposure to different potential hazards and in different environments.
- When selecting respirators, it's important to consider the hazard, exposure, and fit.

Fit testing expertise

- 3M can provide guidance and support for implementing fit testing within your respiratory protection program. Visit 3M.com/respiratorfit for the latest information.
- There are multiple fit testing methods available. 3M can offer guidance regarding how to implement OSHA required fit testing within your respiratory protection program.

A variety of innovative technologies and features designed to enhance wearer comfort and fit.

The 3M™ Aura™ 1870+ Particulate Respirators have a three panel flat fold design that makes it suitable for a wide range of face shapes and sizes, and has a fit test pass rate of up to 93%.*

[1] Occupational Safety and Health Administration (1974). Occupational Safety and Health Standards, 1910.134, Appendix A. Fit Testing Procedures (Mandatory). https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9780

*Based on quantitative fit testing in the 3M United States Fit Test Laboratory in April-May 2021 of subjects with a range of face sizes (face sizes 1 through 10 on the NIOSH bivariate grid (PDF, 422.93 KB). A passing fit factor is defined as 100, based on OSHA 1910.134. 3M™ Aura™ 1870+ was tested, 9205+ and 9210+ pass rates are based on these test outcomes, as further described in the Similar-Fit Model Pairings of 3M Filtering Facepiece Respirators (PDF, 113.55 KB). Individual results may vary. For more information, view this 3M Respirator Fit Study (PDF, 312.16 KB).

Get the right protection for the job.

Direct care for patients with suspected or confirmed infectious pathogens.

The health and safety of staff is essential in order to deliver care to patients. Healthcare workers may be exposed to a wide range of hazards when providing care to patients and while working in patient care areas. Even with other controls in place, standard and transmission based precautions are essential for helping reduce transmission risk. Some potential hazards may include bloodborne pathogens, bacteria or viruses transmitted via droplets or airborne particles, or performing aerosol generating procedures on patients with suspected or confirmed infectious disease. Healthcare workers need a wide range of PPE options to help reduce risk of exposure depending on the anticipated hazard, clinical situation or procedure.

Potential workers at risk:

- Nurses
- Doctors
- Therapists
- Nursing assistants
- Patient care techs
- Environmental services personnel
- Paramedics/first responders

Anticipated hazard*	Potential respiratory, eye and face protection options**
Only airborne (or aerosol) particulate hazards	Filtering Facepiece Respirator (FFR) OR Surgical Filtering Facepiece Respirator OR Powered Air-Purifying Respirator with appropriate filter
Airborne (or aerosol) particulate hazards **+ risk of blood or bodily fluids, splashes or sprays**	Surgical FFR + Goggles[1] OR Faceshield[1] OR Powered Air-Purifying Respirator with appropriate filter
Airborne (or aerosol) particulate hazards **+ risk of blood or bodily fluids, splashes or sprays** **+ sterile field**	Surgical FFR + Goggles[1] OR Faceshield[1]

*Based on facility hazard assessment, infection control risk assessment, anticipated exposure and exposure assessment

**in addition to other PPE.

[1]Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee, 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.htm

Get the right protection for the job.

Handling and administration of hazardous drugs (HD) and drug neutralization.

Every day in healthcare settings, workers are exposed to various drugs such as chemotherapy, antiviral treatments, hormones and other therapies. Many of these drugs can present serious hazards to the health and safety of workers who handle them. Potential routes of exposure include absorption through the skin, inhalation of dusts, aerosols of vapors, accidental injection and unintentional ingestion. In addition to other controls, staff need a variety of PPE options depending on the risk of exposure and activities performed.

Potential workers at risk:

- Pharmacists
- Pharmacy technicians
- Nurses
- Doctors
- Environmental services personnel

Some tasks that may have a higher risk of exposure include:[1,2]

Cleaning · Transport · Storing · Compounding · Dispensing · Administering · Patient Care · Disposal · Managing Waste · Receiving

Task or Anticipated Hazard for which PPE may be recommended*,[1,2]	Potential respiratory, eye and face protection options**
Unpacking hazardous drugs (HD)	Half Facepiece Reusable Respirator† + Goggles; OR Full Facepiece Reusable Respirator†; OR Powered Air-Purifying Respirator†
Known or suspected airborne exposure to powders or vapors **Compounding HDs without ventilated engineering controls** **Attending to HD spills** **Deactivating, decontaminating, and cleaning underneath the work surface of a ventilated hood**	Full Facepiece Reusable Respirator†; OR Powered Air-Purifying Respirator†
Cutting, crushing or manipulating tablets or capsules without ventilated engineering controls	Filtering Facepiece Respirator (FFR) or Surgical FFR + Goggles; OR Half Facepiece Reusable Respirator† + Goggles; OR Full Facepiece Reusable Respirator†; OR Powered Air-Purifying Respirator†
Handling drug contaminated waste with inhalation potential **Administering certain formulations of HDs to Patients** **Handling patient body fluids that may contain HDs**	Filtering Facepiece Respirator (FFR) or Surgical FFR + Goggles and Faceshield†† ; OR Half Facepiece Reusable Respirator† + Goggles and Faceshield††; OR Full Facepiece Reusable Respirator†; OR Powered Air-Purifying Respirator†

*Based on facility hazard assessment, relevant occupational exposure limits, exposure and exposure assessment.
**In addition to other PPE.
† Used with appropriate filters/cartridges for hazard.
†† Eye and face protection must be worn when there is a risk of spills or splashes of HD's or HD waste materials when working outside of a ventilated device (USP-800)
[1] NIOSH [2016]. NIOSH List of Antineoplastic and Other Hazardous Drugs in Healthcare Settings, 2016. DHHS (NIOSH) Publication No. 2016-161
[2] USP General Chapter <800> Hazardous Drugs- Handling in Healthcare Settings, 2020. Retrieved from www.usp.org.

Get the right protection for the job.

Disinfection and chemical use.

Disinfectants and other chemicals used in healthcare facilities are essential for keeping patients safe and care delivery. These chemicals can be potentially hazardous to the workers using them. Potential routes of exposure can include eye or skin absoprtion and inhalation if the chemicals become airborne as gases, vapors or particulates. Hazard and chemical exposure assessment are critical for worker health and safety to determine approaches to help reduce risk and put appropriate controls in place.

Potential workers at risk:

- Environmental services staff
- Central sterile supply staff
- Laboratory personnel
- Operating room staff

Task or Anticipated hazard for which PPE may be recommended*,1-5,§	Potential respiratory, eye and face protection options**
High level disinfection of medical instruments or devices using glutaraldehyde **High level disinfection of medical devices or instruments, medical instruments or devices using peracetic acid (PAA)** **High level disinfection of medical instruments or devices, environmental disinfection using hydrogen peroxide**	Half Facepiece Reusable Respirator† + Goggles and Faceshield†† OR Full Facepiece Reusable Respirator† OR Powered Air-Purifying Respirator†
Tissue preservation in the laboratory, processing operating room specimens using formaldehyde‡	Half Facepiece Reusable Respirator† + Goggles‡ and Faceshield††,‡ OR Full Facepiece Reusable Respirator† OR Powered Air-Purifying Respirator†

*Based on facility hazard assessment, relevant occupational exposure limits, exposure and exposure assessment.

**In addition to other PPE.

† Used with appropriate filters/cartridges for contaminant.

†† Eye and face protection may be needed based on exposure assessment

‡ OSHA Formaldehyde standard requires gas-proof goggles

§ Not a complete list of potentially hazardous chemicals

[1] Best practices for the safe use of glutaraldehyde in health care. Occupational Safety and Health Administration. https://www.osha.gov/sites/default/files/publications/glutaraldehyde.pdf. Published 2006. Accessed November 3, 2022.

[2] CDC - NIOSH Pocket Guide to Chemical Hazards - hydrogen peroxide. Centers for Disease Control and Prevention. National Institute for Occupational Safety and Health. https://www.cdc.gov/niosh/npg/npgd0335.html. Published October 30, 2019. Accessed November 3, 2022.

[3] OSHA Fact Sheet Formaldehyde. Occupational Safety and Health Administration. https://www.osha.gov/sites/default/files/publications/formaldehyde-factsheet.pdf. Published 2011. Accessed Novermber 3, 2022.

[4] OSHA Federal Regulation 29 CFR 1910.1048 – Formaldehyde

[5] 3M. WorkerPPETipsforPAA. https://multimedia.3m.com/mws/media/1679382O/worker-personal-protective-equipment-ppe-tips-for-peracetic-acid-use-in-pharmaceuticals-tb.pdf

⚠ WARNING

These respirators help to protect against certain airborne contaminants. Before use, the wearer must read and understand the User Instructions provided as part of the product packaging. A written respiratory protection program must be implemented meeting all the requirements of OSHA 1910.134 including training, fit testing and medical evaluation. In Canada, CSA standards Z94.4 requirements must be met and/or requirements of applicable jurisdiction, as appropriate. Improper use may result in sickness or death. For correct use, see supervisor and User Instructions, or call 3M PSD Technical Service in USA at 1-800-243-4630 and in Canada at 1-800-267-4414.

Respiratory:

Respirators help protect against certain airborne contaminants. Before use, the wearer must read and understand the User Instructions provided as a part of the product packaging. Follow all local regulations. In the U.S., a written respiratory protection program must be implemented meeting all the requirements of OSHA 29 CFR 1910.134 including training, fit testing and medical evaluation. In Canada, CSA standards Z94.4 requirements must be met and/or requirements of the applicable jurisdiction, as appropriate. Misuse may result in sickness or death. For correct use, consult supervisor and User Instructions, or call 3M Personal Safety Division (PSD) Technical Service in the U.S.A. at 1-800-243-4630. In Canada, call 1-800-267-4414.

Warranty:

3M will replace or refund the purchase price of any Occupational Health and Environmental Safety Division (OH&ESD) product found to be defective in material, manufacture, or not in conformance with any express warranty. This warranty is exclusive and is in lieu of any implied warranty of merchantability or fitness for a particular purpose. LIMITATION OF LIABILITY: Except as provided above, 3M shall not be liable or responsible for any loss or damage, whether direct, indirect, incidental, special or consequential arising out of the sale, use or misuse of 3M OH&ESD products, or the user's inability to use such products. THESE REMEDIES SET FORTH HEREIN ARE EXCLUSIVE.

3M

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