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| **Personal Protective Practices** |
| **Purpose** | This procedure provides instructions for PERSONAL PROTECTIVE PRACTICES. |
| **Policy Statements** | Personal protective equipment (PPE) protects employees from the risk of injury by creating a barrier against workplace hazards. PPE is not a substitute for good engineering controls or good work practices, but should be used in conjunction to ensure the safety and health of laboratory employees.  This policy applies to all laboratory staff handling patient specimens, hazardous chemicals or working in areas where patient specimens or hazardous chemicals are located.Personnel that do not comply with PPE requirements are subject to corrective action.* The laboratory safety officer and laboratory leadership conduct routine PPE audits.
* Non-compliant instances will be documented. The affected employee will be reminded about the PPE policy by the safety officer or a member of lab leadership for up to two occurrences.
* Corrective action will be issued by a laboratory manager/supervisor if a third non-compliant event is observed with an employee.
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| **Definitions** | Blood – Human blood, human blood components, and products made from human blood.Other Potentially Infectious Materials (OPIM) – (1) Cerebrospinal fluid, semen, vaginal secretions, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids; (2) Any unfixed tissue or organ (other than intact skin); (3) HIV-containing cell or tissue cultures, and HIV or HBV containing culture medium or other solutions.Personal Protective Equipment (PPE) – Specialized clothing or equipment worn for protection against a hazard. |
| **Special Safety Precautions**  | The appropriate personal protective equipment must not permit blood or other potentially infectious or hazardous materials to pass through to reach the employee's work clothes, street clothes, under garments, skin, eyes, mouth, or other mucous membranes. |
| **Cleaning and Maintenance** | All PPE must be kept clean and properly maintained.PPE shall be properly cleaned and sanitized before sharing between employees. |
| **Non-Laboratory Staff** | PPE must be offered to non-lab staff if they will be working in the production areas of the laboratory, e.g. field service engineers, Facilities staff, research/study personnel, etc. PPE must be offered to visitors that have been authorized to experience the production areas of the laboratory. |
| **COVID-19 Response: PPE Guidelines** | All laboratory staff must wear an ear-loop mask during their shift. * Ear-loop masks should be utilized for the entire shift unless they have become contaminated or soiled. If this occurs, then discard and replace with a new mask.
* Homemade masks should only be worn while entering the facility before the start of a shift.

Laboratory staff that are involved with patient/family encounters must wear an ear-loop mask and a face shield. This includes all non-suspected and negative COVID-19 patients. Laboratory staff that are involved with a **known or suspected COVID-19 positive patient** must follow Contact/Droplet + Eye Protection precautions by donning the following PPE: * Ear-loop mask
* Face shield
* Gloves
* Gown

*Note: N-95 masks are reserved for aerosol-generating scenarios (Airborne + Contact precautions)*. Stay informed & current by reviewing all updated information provided by the Children’s Minnesota HICS team (i.e. GroupWise emails, Star Net news).  |
| **Personal Protective Equipment:** |
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|  | Gloves shall be located in all work areas where they are required. |
| **Gloves** | Gloves must fit properly. They should fit snugly over the entire hand. Loose fitting gloves or gloves with fingers which are too long for the user’s hands, do not provide a safe grip. | **Related Document**[SA 10.04.a1 Gloves: Don, Adjust, Doff](http://khan.childrensmn.org/Manuals/Lab/SOP/Gen/Safety/Res/205902.pdf) |
|  | Wear disposable gloves when exposure to blood, body fluids or other potentially infectious materials (OPIM) is reasonably anticipated. |
|  | Wear gloves when contact with or exposure to hazardous (e.g. corrosive, flammable, carcinogenic) chemical substances is reasonably anticipated. |
|  | Gloves shall be worn for these activities: * Venous and capillary sample collection
* Handling or processing of blood, body fluids or OPIM
	+ This includes specimens suspected of containing a highly infectious pathogen (i.e. Avian influenza, MERS-CoV, SARS-CoV, COVID-19)
* Handling or preparation of chemicals or reagents
* Handling sample containers containing blood, body fluids or OPIM
	+ This includes specimens suspected of containing a highly infectious pathogen (i.e. Avian influenza, MERS-CoV, SARS-CoV, COVID-19)
* Maintaining or troubleshooting laboratory QC, instruments or reagents
* Cleaning, touching or working on or near contaminated or potentially contaminated work surfaces
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|  | Do not wash or disinfect gloves for reuse; the only exception being reusable utility gloves. |
|  | Change gloves when visibly contaminated. |
|  | Change gloves when torn, punctured or when the barrier properties are compromised. |
|  | Remove gloves before leaving the laboratory and entering common use spaces or clean areas, e.g. lab lounge, lab offices, bathrooms. |
|  | Dispose gloves in regular trash or if grossly contaminated, in the appropriate hazardous waste container. |
|  | Perform hand hygiene after gloves have been removed using soap and water or alcohol based hand rub. |
|  | Staff working in microbiology, handling plates away from the culture set up area, are not required to wear gloves due to the decrease in tactile sensitivity which may increase hand contamination.All persons upon leaving the microbiology area are required to wash their hands with soap and water or alcohol based hand rub. |
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| **Lab Coat** | Clean lab coats are located in a separate area from used/dirty lab coats. |
|  | Wear a lab coat when working in all technical areas of the laboratory. |
|  | Wear a lab coat when exposure to blood, body fluids or OPIM is reasonably anticipated. |
|  | Wear a lab coat when contact with or exposure to hazardous (e.g. corrosive, flammable, carcinogenic) chemical substances is reasonably anticipated. |
|  | A lab coat shall be worn for these activities: * Handling or processing of blood, body fluids, or OPIM.
	+ This includes specimens suspected of containing a highly infectious pathogen (i.e. Avian influenza, MERS-CoV, SARS-CoV, COVID-19)
* Handling or preparation of chemicals or reagents.
* Handling sample containers containing blood, body fluids or OPIM.
	+ This includes specimens suspected of containing a highly infectious pathogen (i.e. Avian influenza, MERS-CoV, SARS-CoV, COVID-19)
* Maintaining or troubleshooting laboratory QC, instruments or reagents.
* Cleaning, touching or working on or near contaminated or potentially contaminated work surfaces.
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|  | Lab coats must be removed before entering clean areas, e.g., lab lounge, hospital dining room, lab offices, bathrooms. Lab coats should only be used outside of the laboratory for safety-related personal protection.  |
|  | Place contaminated/dirty lab coats in the provided bins for laundering. |
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| **Eye and Face Protection** | Eye and face protection shall be located in all work areas where they are required. |
|  | Eye and face protection equipment includes but is not limited to : face mask, mask with eye shield, goggles, safety glasses, safety glasses with side shields, chin length face shield, counter mounted splash guard. |
|  | Inspect eye and face protection for damage (cracks, scratches), cleanliness and proper operation before each use. If deficiencies are noted, the equipment should be cleaned, repaired or replaced before use. |
|  | Wear a mask, goggles, glasses with side shields or chin length face shield or work behind a splash guard when splashes, spray, splatter or droplets of blood, body fluids or OPIM may be generated and eye, nose or mouth contamination is reasonably anticipated. |
|  | Wear eye and face protection or work behind a splash guard when collecting capillary blood samples or transferring blood samples from syringes to blood collection tubes. |
|  | Wear a mask, goggles, glasses with side shields or chin length face shield, or work behind a splash guard when splashes or spills of hazardous (e.g. corrosive, flammable, carcinogenic) chemical substances may be generated and eye, nose or mouth contamination is reasonably anticipated.  |
|  | Eyeglasses without sidepieces are not considered PPE. |
|  | Eye and/or face protection shall be worn or a splash guard shall be utilized for these activities:* Handling or processing of blood, body fluids or OPIM.
	+ Wear a N95 or PAPR and utilize a biosafety cabinet II (BSC-II) while working with specimens that are suspected of containing a highly infectious pathogen (i.e. Avian influenza, MERS-CoV).
* Handling or preparation of chemicals or reagents.
* Autopsies.
* Working with liquid nitrogen.
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|  | Remove eye and/or face protection before leaving laboratory and entering common use spaces or clean areas, e.g., lab lounge, hospital dining room, lab offices, bathrooms. |
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| **Temperature Resistant Gloves** | Temperature resistant gloves protect hands when handling or manipulating equipment, reagents or specimens that may be harmful to hands due to extreme heat or cold. |
|  | Temperature resistant gloves shall be worn for these activities:* Handling specimens from the -70º C freezer.
* Working with dry ice.
* Working with liquid nitrogen.
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|  | If soiled, wipe gloves clean with damp cloth.Contamination with biohazard substances requires cleaning with 10% bleach, Oxivir Tb wipes, or Sani-wipes. |
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| **Disposable Barrier Gown** | Disposable barrier gowns are located in the histology department. |
|  | Wear a disposable barrier gown when exposure to blood, body fluids or OPIM is reasonably anticipated. |
|  | Wear a disposable barrier gown when contact with or exposure to hazardous (e.g. corrosive, flammable, carcinogenic) chemical substances is reasonably anticipated. |
|  | A disposable barrier gown may be worn for these activities:* Handling fresh specimens (unfixed).
* Performing autopsies.
* Working at the grossing bench.
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|  | Dispose gowns in regular trash or if grossly contaminated, in the appropriate hazardous waste container. |
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| **Disposable Apron** | Disposable aprons are located in the histology department. |
|  | Aprons may be worn when it is reasonably anticipated that an employee will have contact with blood, body fluids or OPIM. |
|  | Aprons may be worn when contact with or exposure to hazardous (e.g. corrosive, flammable, carcinogenic) chemical substances is reasonably anticipated. |
|  | Aprons are needed when gross contamination is expected and then worn as additional (secondary) protection over a lab coat or disposable lab gown, e.g., autopsies. |
|  | A disposable apron may be worn for these activities:* Handling fresh specimens (unfixed).
* Working at the grossing bench.
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|  | Dispose aprons in regular trash or if grossly contaminated, in the appropriate hazardous waste container. |
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| **Sleeve Protectors** | Sleeve protectors are located in the histology department. |
|  | Sleeve protectors may be worn when it is reasonably anticipated that an employee will have contact with blood, body fluids or OPIM. |
|  | Sleeve protectors may be worn when contact with or exposure to hazardous chemicals is reasonably anticipated. |
|  | Dispose sleeve protectors in regular trash or if grossly contaminated, in the appropriate hazardous waste container. |
| **Shoe Covers**

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| Shoe covers are located in the morgue area. |
| Shoe covers may be needed when gross contamination is expected and then worn as additional protection over shoes, e.g., autopsies. |
| Dispose shoe covers in regular trash or if grossly contaminated, in the appropriate hazardous waste container. |

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| **Related Policies** | [984.00 Personal Protective Equipment Program](http://khan.childrensmn.org/manuals/policy/900/051173.pdf)[1202.00 Bloodborne Pathogen Exposure-Control Plan](http://khan.childrensmn.org/manuals/policy/1200/005626.pdf)[SA 10.04.a1 Gloves – Don, Adjust, Doff](http://khan.childrensmn.org/Manuals/Lab/SOP/Gen/Safety/Res/205902.pdf) |
| **References** | 1. OSHA, 29 CFR 1910.1450, *Occupational Exposure to Hazardous Chemicals in Laboratories*
2. OSHA, 29 CFR 1910.1030, *Bloodborne Pathogens*
3. CLSI, *Clinical Laboratory Safety; Approved Guideline-3rd Edition*. CLSI document GP17-A3, Clinical and Laboratory Standards Institute, Wayne, PA, 2012.
4. MMWR, *Guidelines for Safe Work Practices in Human and Animal Medical Diagnostic Laboratories,* CDC; Jan 6, 2012.
5. CLSI, *Protection of Laboratory Workers From Occupationally Acquired Infections; Approved Guideline-Fourth Edition*. CLSI document M29-A4, Clinical and Laboratory Standards Institute, Wayne, PA, 2014.
6. SARS, *Appendix F5— Laboratory Biosafety Guidelines for Handling and Processing Specimens Associated with SARS-CoV,* CDC; Dec 6, 2017.
7. MERS, *Lab Biosafety Guidelines,* CDC; Aug 2, 2019.
8. COVID-19, *Laboratory Biosafety Guidelines,* CDC; Aug 11, 2020.
9. Influenza (Flu), *CDC and USDA: Interim Risk Assessment and Biosafety Level Recommendations for Working with Influenza A (H7N9) Viruses*, CDC; Jun 6, 2013.
10. [Children’s MN Universal Masking & Eye Protection requirements](https://starnet.childrenshc.org/departments/infectioncontrol/pdf/covid-19-universal-masking.pdf).
11. [Children’s MN PPE and Isolation Precautions](https://starnet.childrenshc.org/Departments/infectioncontrol/pdf/ppe-for-staff.pdf).
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| **Historical Record** | **Version** | **Written/Revised by:** | **Effective Date:** | **Summary of Revisions** |
| 1 | Carol Cram | Unknown | Initial Version |
|  | 2 | Kerstin Halverson | 12/26/03 |  |
|  | 3 | Carol Buhl | 07/31/2013 | Reformatted to CMS.Added definitions.Added PPE locations, maintenance and disposal information.Added temperature resistant gloves, disposable lab gowns, aprons and sleeve protectors to PPE.Added activity scenarios for wearing PPE.Added references and related policies.Renumbered. |
|  | 4 | Carol Buhl | 12/22/2014 | Included bathrooms as clean areas.Changed ‘disposable lab gown’ to ‘disposable barrier gown’.Added foot covers as additional PPE for autopsies, if needed.  |
|  | 5 | Carol Buhl | 12/29/2016 | Added SA 10.04.a1 Gloves - Don, Adjust, Doff policy to Related Policies. |
|  | 6 | Carol Buhl & Lab Safety Committee | 12/28/2018 | Added Non-Lab Staff requirements for PPE in the lab.Added information about glove usage in the Micro department.Updated references. |
|  | 7 | Andrew Fangel | 09/23/2019 | Updated guidelines for lab coat usage outside of the laboratory.  |
|  | 8 | Andrew Fangel | 04/10/2020 | Added corrective action measure for observed PPE non-compliant events. |
|  | 9 | Andrew Fangel | 06/04/2020 | Added COVID-19 response: PPE guideline section. Added references. |
|  | 10 | Andrew Fangel | 10/14/2020 | Clarified necessary PPE for dealing with suspected highly infectious specimens/pathogens. Clarified that PPE must be offered to authorized visitors of the lab.Added references. |