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| **Electrical Safety** |
| **Policy** | This policy provides guidance for Electrical Safety. |
| **Hazards** | In the laboratory, workers may be exposed to electrical hazards including electric shock, electrocutions, fires and explosions. Potential exposures to electrical hazards can result from faulty electrical equipment/instrumentation or wiring, damaged receptacles and connectors, or unsafe work practices.Employees should take proper precautions when working with and around electrical equipment in the laboratory. |
| **General Safety Rules** | 1. Always follow manufacturer’s recommendations for using electrical equipment.
2. Do not use electrical equipment to perform a task for which it is not designed.
3. Most equipment includes either a 3-pronged plug or double insulation. Equipment with neither of these features is less safe but may meet electrical codes. You will not be protected from electric shock if a 3-pronged plug is not inserted into a 3-prong outlet.
4. If you plug more than two pieces of low demand equipment into a standard outlet, use a fused power strip that will shut off if too much power is used.
	* Only one power strip is allowed per outlet and they may not be daisy chained (one plugged into another) together.
5. Outlets near a sink or other water source are Ground-Fault Circuit Interrupter (GFCI) protected.
6. Do not handle electrical equipment with wet hands or when standing on a wet floor.
7. **Do not disable any electrical safety feature**.
8. Before turning equipment on, check that all power cords are in good condition.
9. The use of electrical power cord adapters and extension cords of any kind are prohibited except where approved by the Biomedical or Facilities departments.
10. If you see a person being electrocuted, DO NOT TOUCH THEM! The electricity can go through you, too. If possible, turn off the power (pull the plug or trip the circuit breaker), or use an item made of non-conductive material (e.g.,wooden broom handle) to pry him or her away from the contact.
	* Call the emergency number immediately.
* **Minneapolis: 5-7777**
* **St. Paul: 1-8899**
1. Turn electrical power switches to the OFF position before connecting or disconnecting the power plug.
2. Electrical cords should be connected or disconnected by handling the power plug itself – never pull on the cord.
3. Electrical outlet covers must be in good condition and secured tightly to the wall.
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|  | 1. Tape may not be applied to power cords except to provide additional protection from abrasion. Splices are not permitted. All damaged power cords must be replaced.
2. Loose electrical cords should be secured with ties or bands.
3. Place equipment that generates heat (refrigerator, freezers, analyzers) to allow breathing space for airflow and heat dissipation.
4. Biomed or Facilities must perform all work involving power distribution, including switches, outlets, circuit boxes, fuses and circuit breakers.
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| **Instrument Safety Rules** | 1. All powered devices must be safety checked before use. Contact Biomed to perform a safety check on incoming lab equipment before placing into service. A safety check should include a ground and current leakage check.

Safety checks will be performed annually thereafter.1. Battery-powered electrical devices do not need to be submitted for a safety check, except when used in patient sensitive areas.
2. Report all tingles, shocks or potential shock hazards to Biomed immediately. Post signs stating device/instrument is not to be used until repaired.
3. All instruments must be grounded, except those with non-conductive plastic cases and controls such as microscopes.
4. Equipment with damaged power cords must be taken out of service until repaired.
5. DO NOT ATTEMPT TO REPAIR ANY INSTRUMENT WHILE IT IS PLUGGED IN.
6. Remove rings, watches and other jewelry before working on instruments.
7. Ensure critical lab equipment is plugged into red emergency power outlets.
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| **Electrical Failures** | 1. Immediately report any electrical power failures to Safety and Security.
	* **Minneapolis: 5-7777**
	* **St. Paul: 1-8899**
2. Generators will supply power to all emergency (red) outlets. Critical laboratory instruments should be connected to these outlets.
3. In an emergency situation when electricity is on emergency generators you should:
* Shut off all unnecessary equipment
* Use extension cords, if necessary
* Use stairs, do not use elevators
* Have flashlights and headlamps available
* Ensure patients and staff are safe
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| **Supporting Documents** | [927.00 Medical Equipment Management Program](http://khan.childrensmn.org/manuals/policy/900/005324.pdf)[900.00 Problems with Medical Devices and Products: Reporting, Alerts, and Recalls](http://khan.childrensmn.org/manuals/policy/900/005295.pdf)[938.05 Use of Extension Cords and Multi-Outlet Receptacles](http://khan.childrensmn.org/manuals/policy/900/005332.pdf) |
| **References** | 1. OSHA. OSHA Quick Facts. Laboratory Safety. Electrical Hazards. 2011.
2. CLSI. Clinical Laboratory Safety; Approved Guideline – Third Edition. CLSI document

 GP17-A3. Clinical and Laboratory Standards Institute, Wayne, PA; 2012. |
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| **Historical Record** | **Version** | **Written/Revised by:** | **Effective Date:** | **Summary of Revisions** |
| 1 | Carol Cram | November 1999 | Initial  |
|  | 2 | Kerstin Halverson | 07/01/2003 |  |
|  | 3 | Kerstin Halverson | 08/17/2004 |  |
|  | 4 | Carol Buhl | 06/26/2015 | Reformatted to CMS.Renumbered from 6.0.Added Supporting Documents.Added References. |
|  | 5 | Laboratory Safety Committee / Carol Buhl | 05/25/2017 | Added ‘do not use elevators’ in an emergency situation when electricity is on emergency generators. |