Section 8 Health, Safety and Security Subject 8.1 Health and Safety **8.1.24 General Electrical Safety**	02/03/12 -Originated -Reviewed w/ changes -Reviewed w/o changes 02/03/12 -Effective Environmental Health and Safety -Author

General Electrical Safety

Definitions

Daisy Chaining: One extension cord, multi-outlet adapter or surge protector plugged into one another

Polarized Prongs: One prong wider than the other

Temporary Use: Pertaining to the use of extension cords, "temporary" means in-use for the purpose of performing a limited duration task such as drilling holes, buffing a floor, etc. generally not to exceed one work shift.

Permanent Use: Pertaining to the use of extension cords, "permanent" means used for longer than a single shift for an individual task and generally being used in lieu of permanent, fixed wiring and outlet.

"Cheater Adapters" a device used to allow a 3-prong electrical plug to be plugged into a 2-prong outlet. (removal of electrical grounding)

Policy

It is the responsibility of all UTMB personnel, and applicable to all UTMB owned properties including healthcare, research, business and residential areas to follow this policy, promote a safe work and living environment, and be cognizant of potential electrical hazards and preventive measures necessary to minimize or eliminate these hazards.
UTMB shall promote the compliance with and enforcement of the requirements of the Office of the State of Texas Fire Marshal for the safe use of electrical appliances, including extension cords, surge protectors and power adapters.

Requirements and Precautions

The following conditions are expressly forbidden by code and UTMB policy:

1. Extension cords of any type used as permanent wiring.
2. "Daisy chaining" of surge protectors and/or multiple outlet adapters
3. Multiple outlet adapters. Note: Multi-outlet adapters that have integrated surge protectors are allowed
4. Outlets or switches with protective covers missing. If observed, please report to Business, Operations and Finance (BOF) by calling the Clean line at extension 24040 for repair
5. "Cheater" adapters or two-wire AC outlets
6. The cords of surge protectors shall not exceed 6 feet in length

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Requirements and Precautions, continued

NOTE: UTMB, Environmental Health and Safety in conjunction with FOAM will approve the emergency temporary use of extension cords for longer-term use, but in no case will such an installation be permanent.

The following precautions should be employed:

1. Before using any equipment that requires connection to an electrical outlet, make sure you inspect the equipment, and insure that it carries a current electrical safety certification Underwriters Laboratories (UL) label
2. Do not use coffee makers, radios, lamps, or other personal electrical appliances unless they have UL approval
3. Do not clip or tape electric cords and telephone wires to desks. If cords must cross the floor, use plastic channels designated for this purpose
4. Use only electrical equipment that has a three-wire plug or polarized prongs and is properly grounded. FOAM will ensure the grounding of electrical outlets.

Equipment Testing

In the clinical enterprise, the electrical equipment-testing program is designed to ensure a proper ground for all equipment in case the device becomes energized. See Clinical Equipment Services policies for further guidance at **http://www.utmb.edu/ces**.

Responsibility

Responsibility	Action
Environmental Health and Safety (EH&S)	1. Provide consultant services regarding electrical safety 2. Provide liaison services between the Office of the State of Texas Fire Marshal and the UTMB campus 3. Issue electrical safety hazard warnings 4. When needed perform periodic safety surveys of UTMB facilities, with subsequent feed-back to building occupants
UTMB Supervisors	1. Enforce this policy with their employees 2. Provide adequate facilities, supplies and supervision to control electrical hazards 3. Ensure that employees know and understand the potential electrical hazards associated with each instrument and the necessary safeguards to *prevent a possible shock/electrocution.*

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Responsibility, continued

Employees	1. Actively abide by these policies 2. Read and understand the safety information provided by the manufacturer and UTMB, and to notify the supervisor of potential electrical hazards.

In Case of Electrical Shock

1. Immediately disconnect or shut off the power source, and/or free the victim from the source by using a non-conductor.
2. Initiate lifesaving procedures immediately and continue them until professional medical assistance arrives.
   - If the heart has stopped, begin cardiopulmonary resuscitation (CPR) or the use of an AED (Automated External Defibrillator) if available.
   - If respiration has stopped, begin artificial respiration at once
3. Call for emergency assistance quickly. Inside the hospital complex, call extension 24000. Outside the hospital complex, call 911.

Personal Safety

The following safety precautions should be employed if working with electrical equipment:

1. Unplug equipment before attempting to troubleshoot (or repair) equipment.
2. Do not hold energized electrical appliances with wet hands or when wearing wet shoes
3. Body moisture or perspiration lowers resistance, which permits a greater current flow. Keep body resistance high by keeping hands and feet dry

Defective Equipment

Never ignore a tingling sensation caused by a piece of equipment. This indicates that the equipment is defective. Turn it off. Place an "Out of Service" tag on it, and report it to the appropriate department for repairs.

1. Clinical Equipment Services (CES) (for hospital/clinical equipment and non- medical equipment) – ext 76143
   Biomedical Engineering and Electronics (BMEE) (for research equipment) - ext 32750
   Facilities Operations and Management (for building equipment and power) - ext 21586
2. All equipment must be cleaned and disinfected before sending for repair. A Decontamination Form will be completed and note if the equipment cannot be thoroughly cleaned, attach a biohazard tag.
3. Any device or instrument under a private maintenance contract (e.g., photocopy machines, typewriters, dictating machines) should be reported directly to the company that services the contract.

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Guidelines for New Equipment

1. Before obtaining any electrical equipment, the vendor of the equipment must assure UTMB that it meets all existing federal, state and university electrical standards.
2. Consult CES before purchasing, borrowing, leasing, or accepting as a donation any piece of equipment, including but not limited to patient-use, clinical-use or healthcare laboratory electrical equipment, CES can assist in determining whether it meets the institution's safety policy.
3. Immediately following delivery, and before installation and use of newly acquired electrical equipment for use in healthcare, call CES to inspect new equipment. No electrical equipment can be put into service without an appropriately colored (green, yellow, or blue) electrical safety label (excludes general/routine electrical use devices such as lamps, office computers, printers, etc.)

Routine Inspection Preventive Maintenance

1. The operators of all electrical devices are expected to perform visual and operation checks to ensure good mechanical condition and proper operation of equipment each time a device is used.
2. Equipment used in the hospital, clinics, and supporting laboratories shall receive preventive maintenance with supporting documentation.
3. The manufacturer's recommendations should always be followed.

Reference

UTMB Safety Manual – Chapter 6, Sections 4 and 5 Electrical Safety
UTMB Safety Manual – Chapters 8 Electrical Safety Testing And Prevention Maintenance
IHOP 9.13.3 Patient Owned Medical Equipment
IHOP 9.13.22 Handling Malfunctioning, Defective Clinical Equipment, Devices, Supplies