

LOUISIANA STATE UNIVERSITY HEALTH SCIENCE CENTER

**USE OF ELECTRICAL EQUIPMENT IN  
OXYGEN-ENRICHED ENVIRONMENTS**

Purpose: To ensure safe use of electrical equipment in an oxygen-enriched environment.

Policy: I. Definition - Oxygen-enriched atmosphere: An atmosphere in which the oxygen concentration exceeds 23.5 percent by volume.

Example - An oxygen-enriched atmosphere is considered to exist at all points within one foot of a point at which an oxygen-enriched atmosphere is intentionally vented to the atmosphere. For example: for a patient receiving oxygen via a nasal cannula or a face mask, the site would be one foot surrounding the mask or cannula; for a patient receiving oxygen while enclosed in a canopy or incubator, the site would be one foot surrounding the canopy or incubator; for a patient receiving oxygen while on a ventilator, the site would be one foot surrounding the venting port on the ventilator.

\*This definition addresses the normal areas considered oxygen-enriched. An oxygen-enriched atmosphere may occur at other sites remote from the norm due to disconnections, leaks, or ruptures of gas conduits and connections. Vigilance on the part of the patient care team is essential to ensure system integrity.

- II. General Information - Electrical equipment such as electro-cardiographs, oscilloscopes, defibrillators, pacemakers, radiographic equipment, electronic stethoscopes, electrical beds, radios and television sets (including remote controls), call button switch; communication equipment including hearing aids, pillow speakers, telephone handsets; hair dryers, electrically powered nebulizers, vapor generators; and battery powered equipment such as flashlights, laryngoscopes and endoscopic instruments (often employed on patients who are receiving respiratory therapy). This equipment is a source of ignition if electrical defects are present because of arcing and excessive temperatures generated by the flow current.
- III. Electrical Equipment - Electrical equipment used within an oxygen-enriched atmosphere shall be listed for such use (NFPA 5421). Electrical equipment not marked or listed for use in oxygen-

enriched atmosphere may be used in the vicinity if affixed to the bed or wall in such a location that it will not be subject to an oxygen-enriched atmosphere.

Electrical apparatus not listed for use within an oxygen-enriched atmosphere, which might be introduced inadvertently into such an atmosphere, shall be excluded from the site of administration.

Defective electrical apparatus shall be tagged and repaired.

Toys are of special emphasis in pediatric areas. No battery operated toys or friction toys which create sparks will be allowed in oxygen-enriched environments.

Personnel electrical items such as hair dryers, curling irons, and electric shavers may not be used if patient is on oxygen.