PREVENTIVE MAINTENANCE PROCEDURE

DEFIBRILLATOR - Applies to battery- and line-powered defibrillators used with external and internal paddles and/or disposable defibrillation electrodes.

For details, refer to Health Devices Inspection and Preventive Maintenance (IPM) procedure and to the American National Standards Institute standards for defibrillators

Defibrillators
ECRI Procedure/Checklist 407-0595

Cardiac Defibrillator Devices
ANSI/AAMI DF2-1989

Equipment Needed: electrical safety analyzer, defibrillator analyzer, stopwatch or watch with second hand, storage oscilloscope

1. Qualitative Tests
   1.1 Chassis - verify physical integrity, cleanliness
   1.2 Mount/Fasteners - verify physical integrity of mounts (wall, equipment, cart, etc.)
   1.4 AC Plug - verify integrity
   1.5 Line Cord - verify proper insulation and integrity
   1.6 Strain Reliefs - verify physical integrity at both ends of line cord
   1.7 Circuit Breaker/Fuse - verify integrity of external circuit breaker and/or value of external fuse
   1.9 Cables - inspect cables of internal/external paddles, disposable defibrillation electrodes, and synchronizer cables
   1.10 Connectors examine all cable connectors
   1.11 Paddles/Electrodes - verify physical integrity of paddles
   1.13 Controls/Switches - verify proper operation; verify operation of redundant controls
   1.17 Battery/Charger - verify operation & condition of battery/charger
   1.18 Indicators/Displays - verify proper illumination and operation
   1.21 Audible Signal - confirm appropriate volume and operation of volume controls
   1.22 Labeling - verify presence and placement of all labels, placards, instruction cards, etc.
   1.23 Accessories - verify availability of appropriate electrodes and electrodes
   1.24 Internal Discharge Of Stored Energy - verify release of stored energy when power is turned off
   1.25 Synchronizer - verify unit will not discharge when no ECG signal is present

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2. Quantitative Tests (line powered devices)
   2.1 Grounding Resistance [< 0.5 ohm]
   2.2 Chassis Leakage [< 300 microamps]
   2.3 Paddle Continuity [< 0.15 ohm]
   2.4 Energy After 60 Seconds
       [> 85% of energy delivered after immediate discharge]
   2.5 Internal Paddle Energy Limit
   2.10 Output Energy [± 15% or 4J, whichever is greater]
       Test at 10J, 50J, 100J, 200J, 300J, 360J
   2.11 Charge Time [< 15 Sec]
       Max Energy (10th Charge) [± 15% or 4J, whichever is greater]
   2.12 Synchronizer Operation
       Verify that "R" wave of ECG trace is illuminated
       [discharge < 25 mSec after detecting ECG]

3. Waveform Analysis - Display discharge curve through the simulator on
   a storage oscilloscope. Verify that the waveform is within
   specifications per ANSI/AAMI DF2-1989

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Defibrillator (ECRI)
defib.doc