Los Angeles General
Medical Center

ENVIRONMENT OF CARE

2023

MEDICAL EQUIPMENT MANAGEMENT PLAN

Approval: Sajid Yerunkar, Facilities Management Date: 06/16/2023

I MISSION

The mission of Los Angeles General Medical Center's Management of the Environment of Care program is to provide a safe, functional, supportive, and effective environment for patients, staff members, and other individuals in the Medical Center. Consistent with this mission, the Governing Body, administration, and staff provide ongoing support for the Safety Management Program described in this plan.

II PURPOSE

The following plan is designed to fulfill the management of biomedical equipment as addressed in the Joint Commission Accreditation manual under EC.01.01.01, EC.02.04.01, and EC.02.04.03. We are committed to providing an environment that minimizes the clinical and physical risks of equipment through the safe and effective use and maintenance of medical equipment in the hospital's inventory. These procedures require interdepartmental cooperation, which will make our facility safer and our inspections by regulatory bodies successful.

Biomedical equipment is defined as electronic, electrical, or mechanical instrumentation used in direct patient care and diagnostic/laboratory procedures.

Preventive maintenance is defined as regularly scheduled equipment maintenance, function and safety tests of equipment not known to have a malfunction.

The Health Services Preventive Maintenance Program (HSPMS) includes a Computer Managed Maintenance System (CMMS) that maintains a schedule of periodic inspection intervals and generates scheduled Preventive Maintenance (PM) work orders on all equipment in the inventory.

Electrical Safety Tests are included as part of preventive maintenance and are performed, utilizing Datrend and Fluke safety analyzers in accordance with procedures outlined in instruction manuals, located in the Clinical Engineering shops.

Repair is defined as unscheduled maintenance action required due to equipment malfunction.

III SCOPE

The Clinical Engineering Department's electronic Computer Managed Maintenance System (CMMS) assesses and controls the clinical and physical risks of devices used to monitor, diagnosis or treat patients.

All electrical medical devices used in direct patient care are eligible for inclusion in the HSPMS program per the evaluation criteria. Other electrically powered devices not used for direct patient care are also eligible for inclusion in the HSPMS program. The large volume of equipment used in our networks makes it necessary to share equipment responsibilities and use a team approach. Maintenance responsibilities are shared with the following crafts under Facilities Management: Electrical, Equipment Repair, and Steam/Refrigeration. The scope of the equipment maintenance responsibilities assigned to the Clinical Engineering department is less than the scope of the Medical Equipment Program. The scope of the program includes departments such as Anesthesia, Dialysis, Radiology, Respiratory, and the Clinical Laboratory.

Department heads where such specialized equipment is located are responsible for participating in the use of the Medical Equipment Program and to coordinate their departments' efforts with the Clinical Engineering Department. They are responsible for following the written criteria developed by the Clinical Engineering Department and for developing and maintaining a current inventory. Department heads are responsible for orienting new staff to the department and, as appropriate, to job and task specific uses of clinical equipment. When requested, the Clinical Engineering Department provides assistance.

Non-patient care devices, identified as causing unsafe conditions through the service call and quality assurance programs used throughout our network will be included in the preventive maintenance program.

IV OBJECTIVES

The HSPMS program (Health Services Preventive Maintenance System) is designed to meet the Environment of Care Standard EC.01.01.01 of the Joint Commission, Title 22 and other applicable standards and regulations. It has been developed to select and purchase clinical equipment appropriate for the needs of patient care providers. It will assure operational reliability and functionality of equipment through programmed maintenance, reduce incidents and unplanned failures, and identify opportunities to improve equipment performance.

The plan is designed to fulfill the management of biomedical equipment as addressed in the Joint Commission Accreditation manual under EC.01.01.01, EC.02.04.01, and EC.02.04.03. We are committed to providing an environment that minimizes the clinical and physical risks

of equipment through the safe and effective use and maintenance of medical equipment in the hospital's inventory. These procedures require interdepartmental co-operation, which will make our medical center safer and our inspections by regulatory bodies successful.

V ORGANIZATION AND RESPONSIBILITY

The HSPMS program establishes a network of communications and actions between departments that purchase, use or maintain equipment. The Clinical Engineering Department (also referred to as Biomed) has been identified by Administration as the department responsible for the management of the Bio-Medical equipment HSPMS program. The Clinical Engineering Supervisor collaborates with the director of Facilities Management. The Clinical Engineering Department is under Facilities Management and works very closely with the Environment of Care Committee, which is part of the hospital's overall Joint Commission compliance effort. To establish and maintain this management function, the following departments need to act co-operatively.

- Facilities Management
- Equipment User/Care Giver Departments
- Safety Office
- Supply Chain Operations
- Service Vendors/Contractors
- Clinical Health Centers

All direct patient care equipment and other electrically powered devices identified as requiring regular documented maintenance are assigned equipment asset numbers. These asset numbers are used for equipment inventory to schedule maintenance, and they are placed on the equipment history file to facilitate record keeping. All HSPMS Clinical Engineering computer records are referenced to by asset number.

New equipment and other kinds of equipment (i.e. Rental, Loan and Demo) are inspected for safety and proper function prior to initial use as outlined in EC.02.04.01, EP 2.

Each month the CMMS program generates a work orders for the equipment due for PM and inspection. The work orders have written procedures for the required checks. A copy of the completed work order is saved into the history for the equipment.

VI PROCESSES

EC.01.01.01, EP 3 <u>Hospital Has Library of Information Regarding Inspection, Testing, and Maintenance of its Equipment and Systems</u>

CE Policy #.008

Manuals and supporting documentation are kept in the Clinical Engineering shop. Manuals and supporting documentation in electronic form are stored on a local server accessible to all technicians. When possible, manuals and documentation are attached to the equipment

model record for at-a-glance access.

EC.02.01.01, EP 11 Monitoring and Acting on Appropriate Medical Equipment Hazard Notices and Recalls.

CE Policy #.010, DHS Policy #331, Los Angeles General Policy #620

In compliance to DHS Policy #331 and Los Angeles General Policy #620, Supply Chain Operations is responsible for product Recall and Alert notices received from vendors and through ECRI Alerts Workflow system. Notices are marked as applicable or not applicable after reviewing and notes and actions are recorded and stored on ECRI servers. Any action required to equipment will be coordinated with the above office. Alerts pertaining to Biomed equipment are marked applicable open any action taken is documented in the ECRI system. When action on an Alert is completed, the Alert will be marked applicable closed, and actions are recorded on the ECRI Alert Tracker System. CE Policy#.010 describes the policy and procedure in use.

EC.02.04.01, EP 2 Maintaining a Written Inventory of all Medical Equipment

CE Policy #.006, #.007, #.020 Los Angeles General Policy #603

In accordance with EC.02.04.01, EP 2, the CE Policy#.006 will be followed. All pertinent documents referred to in this program as being Clinical Engineering Policies and Procedures Manual relating to EC.02.04.01, EP 2 will be included as evidence in this plan. There are established Material Management, now known as Supply Chain Operations, policies to ensure compliance with the Department of Health Services guidelines concerning the evaluation of medical products and supplies used for patient care.

1. Pre-purchase evaluations consider the following:

- Operation and maintenance of equipment and similar equipment.
- Engineering evaluation of design and quality of manufacturing.
- Electrical safety evaluations.
- Parts availability.
- Review of outside service contracts.
- Analysis of manufactures' market strength.

1. Acquisition –

After medical equipment is purchased and received, Supply Chain Operations notifies Clinical Engineering personnel that a new device has been received. At this time the Incoming Equipment acceptance testing begins.

2. Incoming Equipment acceptance testing –

Items to be tested in accordance with EC.02.04.03, EP 1, all electrically operated equipment received by Supply Chain Operations, other departments and outside vendors must be identified to Facilities Management and acceptance tested prior to initial use. The Clinical Engineering Department has:

- Guidelines for purchasing electrical equipment;
- Clinical Engineering incoming inspection form;
- Procedure for documenting new equipment

Per the Joint Commission EC.02.04.01, EP 2, EC.02.04.03, EP 2 and EC.02.04.03, EP 3 Environment of Care standards, all direct patient care including High Risk (including Life Support) and Low Risk, diagnosis, therapeutic, and monitoring instrumentation are eligible for inclusion in the HSPMS program. CE policies#.007 and # .20 are followed to address this requirement. Information such as maintenance records, user experience, area or use and frequency of use, manufacturer design, PM recommendation interval, and number of devices available as a replacement are also used as indicators to include equipment into the program.

EC.02.04.01, EP 3 Identifying High Risk Medical Equipment

CE Policy #.007, #.020

All direct patient care equipment acquired will be identified by Clinical Engineering for physical risk using the HSPMS program. Physical risk is calculated during incoming inspection and given a score which is stored in the equipment record. High risk equipment is defined as devices that are used to resuscitate or sustain life or help diagnose critically ill patients and can, in case of malfunction, cause serious injury or death to a patient.

EC.02.04.01, EP 4 Equipment Maintenance Inspection, PM, and Repair Programs

CE Policy #.007, #.008, #.015, #.019

Through the following programs, clinical and physical risks are assessed and minimized. CE policy #.008 was developed for compliance.

1. Documentation and acceptance test stickers -

The acceptance incoming inspection form documents the evaluation per EC.02.04.01, EP 2, items included in the Clinical Engineering HSPMS are affixed with an asset tag plus an Electrical Safety test sticker with the due date for the next inspection. The Clinical Engineering Policies and Procedure Manual have a description of identifying medical electronics stickers.

2. Inventory creation and maintenance -

In accordance with EC.02.04.01, EP 2, the inventory is created via data entry of incoming inspection forms. The accuracy of this inventory is maintained through the updating of computer files using Scheduled Work Order PM forms and Inventory Control Equipment Location Change Forms.

3. Equipment inventory control - Loan, rental and demonstration -

The purpose of this procedure is to establish a means for testing and inventorying equipment that is not county owned (EC.02.04.01, EP 2). This procedure is outlined in appendix 8 of the Clinical Engineering Policies and Procedure Manual and CE policy #.008. Items that are

brought into the facility for use that do not belong to the facility (such as in a demonstration, evaluation or as a loan unit), must be inspected and determined safe for use by the Clinical Engineering Department.

3. Preventive Maintenance (PM) –

A. PM Procedures - In accordance with EC.02.04.01, EP 4, written equipment-testing procedures based on manufacturer recommendations exist for PM of the equipment inventory. The procedures are stored on the CMMS in the equipment model module. The CMMS generates monthly work orders for the Clinical Engineering shop. These procedures are referenced using a task code number or manufacturer/model description that is assigned to the equipment at its first inspection. The task procedure can be created, updated or deleted as needed to keep the PM program current. The daily procedure for Clinical Engineering PM appears in appendices 9 & 10 of the Clinical Engineering Policies and Procedure manual. The handling procedure for the work order appears in appendix 11, and the actual work order is shown in appendix 6 of the Clinical Engineering Policies and Procedure manual. A quarterly Unable to Locate equipment list is generated and sent to Nursing Administration for circulation. If the equipment is located, a service call is generated. Service call requests for preventive maintenance checks are documented in the Quality Assurance Tracking program.

B. PM Schedule - In accordance with EC.02.04.01, all equipment items, in the Clinical Engineering HSPMS program, are tested according to manufacturer recommendation or at least annually after initial incoming testing. The Clinical Engineering shop reviews the periodic inspection intervals assigned to cover equipment and has developed criteria for prioritizing equipment that has been assigned the same periodic inspection. Criteria for priority equipment and periodic inspection appears in appendix 12 of the Clinical Engineering Policies and Procedure manual and CE policy #.020. EC.02.04.01, EP 4.

All other non-medical electrically powered equipment will receive an inspection and test when equipment enters the hospital setting. The equipment will be assigned to a craft by the Building Craft Manager. It will be the maintaining crafts responsibility to include it in their Plant Equipment H.S.M.S. maintenance program.

C. PM Stickers - Clinical Engineering HSPMS items are affixed with an adhesive sticker which contains the following information. (see appendix 5 - identifying medical electronic stickers in the Clinical Engineering Policies and Procedure manual.) The sticker identifies to the operator that the equipment has been serviced and when the next inspection of the equipment is due. The service number to call for repair or overdue for preventive maintenance checks is included on the sticker.

D. PM by Contract - some specialized equipment items for departments are provided repair and PM through service contracts. A contract procedure is assigned to items under a service contract that are in our database. The procedure for preventive maintenance and repair of patient care equipment covered by a service contract appears in appendices 30 - 36 of the Clinical Engineering Policies and Procedure manual.

E. Repair Program - Repair requests are directed to the Clinical Engineering office in each area during the hours of 7:00 AM to 3:30 PM Monday thru Friday. Each inspection tag on the equipment includes the telephone extension number to call for service. A service ticket is generated at the Clinical Engineering office by the shop computer. The service ticket lists all the information needed for the technician to respond to the call. Repairs are documented on the service call. If the piece of equipment cannot be repaired on site and must be taken for repair, the Clinical Engineering shop has a limited supply of backup equipment and it is the Charge Nurse who will make the decision on replacing the defective unit with our shop loan unit. Any calls received after normal working hours will be directed to the Facilities Management Call Center. Emergency requests for services will be forwarded to the Building Engineers office. They will contact the problem area and call in a technician if required. An emergency callback list is on file at their office and also at the Clinical Engineering main shop.

If a utility failure occurs, technicians are instructed to respond to their assigned areas and assist staff in patient equipment problems.

EC.02.04.01, EP 5 <u>Inspection, Test, and Maintenance Intervals in Accordance to Manufacturer Recommendations</u>

CE Policy #.007, #.008, #.017

Initial inspection, testing and maintenance schedules are established for equipment at the time of incoming inspection. The Criteria used to select medical equipment into the program (EC.02.04.01, EP 2) CE policy #.007 and #.20 will also be followed to establish maintenance intervals. The manufacturer's recommendations for preventive maintenance, third party recommendations, such as ECRI, are also considered when establishing inspection and maintenance intervals. Life Support equipment P.M. will be done to manufacturer recommendation, in house or contracted. A service call program is in place that tracks the repair calls. The Quality Assurance tracking program will be evaluated for excessive repairs on equipment. Equipment not requiring extensive repair or service calls will be considered for lower maintenance priority. Regulatory agencies such as California State Title 22 must be taken into consideration when adjusting maintenance schedules.

EC.02.04.01, <u>EP 6 Alternate Maintenance Program</u>

CE Policy #.017

Any non-critical equipment that Clinical Engineering has collected history and/or

maintenance data and has been determined that no benefit is found to continue maintenance will be considered for the AEM program. The AEM program would modify, reduce, or remove maintenance based on equipment history and a risk-based assessment for items in the AEM Program.

EC.02.04.01, EP 7 Medical Equipment Inventory in an Alternative Equipment Maintenance Program

CE Policy #.017

Any device that has been included in an AEM program will be identified in the CMMS database.

EC.02.04.01, EP 9 Medical Equipment Emergency Procedures

CE Policy #.016 Los Angeles General Policy #625

1. Equipment considered critical to patient safety shall have emergency procedures in the event a malfunction or failure occurs. Nursing managers should identify all items of medical equipment that would require replacement in the event the equipment is removed from service. The Clinical Engineering department will assist nursing in locating similar equipment within the facility. The Nursing Department will establish interdepartmental protocols for borrowing equipment from other departments. Equipment considered critical to patient safety includes life support, life sustaining or other such equipment whose malfunction or failure may result in an adverse patient outcome.

2. Each department will develop and follow specific clinical procedures in the event of an equipment failure. Clinical emergency procedures required to ensure patient care is not compromised will be instituted. If replacement equipment is necessary, Clinical equipment Operations (depending on the type of equipment) will be notified.

3. Equipment needing repair will be removed from service. The Clinical Engineering Department will be notified and respond to the call.

The Clinical Engineering department will be available on a 24-hour basis to respond to emergencies involving medical equipment malfunctions and/or failures. During normal business hours the Clinical Engineering department can be contacted directly by telephone. Evenings, nights, weekends and holidays, the Clinical Engineering technicians can be contacted by the Building Engineer. The Callback (on call) list is provided to the Building Engineer. It consists of names and home phone numbers of the Clinical Engineering staff. If for some reason the building engineer cannot contact the technicians, he will contact the Clinical Engineering supervisor or his designee.

The Clinical Engineering staff member responding to the call will assess the medical equipment failure/malfunction and provide repair services for equipment that is needed before the normal repair cycle. If spare equipment of the same type is available at the Clinical Engineering department, the technician may chose to substitute the device and repair

the faulty equipment the following business day.

If a utility failure occurs during business hours, technicians are instructed to respond to their assigned areas and assist staff in patient equipment problems. The Building Engineer will institute the call back procedure if such a problem occurs evenings, nights, weekends, holidays or after business hours.

Medical equipment that is involved in an incident with potential for serious harm, injury to patient or staff, or involved in a death will be removed from service immediately and hospital policy # 304 (Medical Device Reporting) will be followed. The equipment will be evaluated and the incident will be investigated according to SMDA criteria and Los Angeles Medical Center policies.

EC.02.04.01, EP 10 Quality Control and Maintenance of Radiology Images, including CT, PET, MRI and Nuclear Medicine

Quality control and maintenance of radiology equipment are the responsibility of the Radiology department. Activities to maintain the quality of diagnostic images is currently under the direction of the Radiation Safety Officer.

EC.02.04.03, EP 1 Safety, Operational, and Functional Checks Before Initial Use and After Major Repairs or Upgrades on Medical Equipment

CE Policy #.007

The Clinical Engineering department is notified by Supply Chain Operation of new medical equipment received. After performing incoming inspection (see EC.02.04.01, EP 4, 2), functional and alarm checks of the equipment is performed and documented in the CMMS. The Clinical Engineering department also performs safety, operational and functional checks after major repairs or upgrades and the service work orders are also documented in the CMMS.

EC.02.04.03, EP 2 Inspection, Testing, and Maintenance of all High-Risk Equipment

CE Policy #.017, #.020

The Clinical Engineering department will perform initial inspections, periodic tests, and maintenance on all high-risk equipment in the medical equipment inventory. These activities are to be completed with 100% compliance and are documented on the CMMS and equipment will be identified as high-risk when applicable.

EC.02.04.03, EP 3 Inspection, Testing, and Maintenance of Non-High-Risk Equipment

CE Policy #.017, #.020

The Clinical Engineering department will perform initial inspections, periodic tests, and maintenance on all non-high-risk equipment in the medical equipment inventory. These

activities are documented on the CMMS and equipment will be identified as non-high-risk when applicable.

EC.02.04.03, EP 4 Performance Testing of all Sterilizers in use

Maintenance and repair of sterilizers are the responsibility of the Steam/Refrigeration section under the control of Facilities Management. The maintenance and repair records are kept on file in that section. Records of performance testing are kept in the area where the sterilizer is operated. Biological testing is the responsibility of the Epidemiology Department. Policies and Procedures for this testing will be followed and test results recorded.

EC.02.04.03, EP 5 Testing of Water used in Chronic Renal Dialysis

Los Angeles General Policy #612

There is annual chemical testing and monthly biological testing of water used in chronic renal dialysis. Policies and procedures on the chloramines removal from the water used in dialysis in the Renal Department are on file in the Dialysis Office. Trident Technologies, an outside contractor, maintains the R.O. filtration system. The dialysis area also maintains a logbook of such testing and frequency of the test. Water samples are sent each month for testing and test results recorded. Epidemiology is responsible for the reviewing biological testing.

EC.02.04.03, EP 8 Equipment Listed for Use in Oxygen-Enriched Atmospheres are Clearly and Permanently Labeled

Respiratory Therapy and Nursing departments comply with federal guidelines for labeling oxygen-metering and oxygen-dispensing equipment.

EC.02.04.03, EP 16 Inspect, Test and Calibrate Nuclear Medicine Equipment

Nuclear Medicine equipment is under vendor contract for inspection, testing, and calibration. The vendor documents these activities. Quality control tests are performed on a daily and weekly basis and are documented.

EC.02.04.03, EP 18 Maintaining Quality of CT, PET, MRI and Nuclear Medicine Images Produced

Radiology, under the direction of the Radiation Safety Committee currently use qualified medical physicist and Radiation Safety Officer to maintain the quality of CT, PET, MRI, and Nuclear Medicine images produced.

EC.02.04.03, EP 20 Radiation dose on each CT imaging system is tested at least annually to verify the radiation dose displayed is within 20 percent of the actual dose.

Radiology, under the direction of the Radiation Safety Committee currently use qualified

medical physicist and Radiation Safety Officer to maintain the quality of CT, PET, MRI, and Nuclear Medicine images produced. Each CT imaging system is tested annually, and readings recorded, to verify the radiation dose is within 20% of the dose displayed on each CT imaging system.

EC.02.04.03, EP 21 Annual Performance Evaluation of all CT Imaging Equipment.
Radiology, under the direction of the Radiation Safety Committee currently use qualified medical physicist and Radiation Safety Officer for annual performance evaluation of all CT imaging equipment.

EC.02.04.03, EP 22 Annual Performance Evaluation of all MRI Imaging Equipment.
Radiology, under the direction of the Radiation Safety Committee currently use qualified medical physicist and Radiation Safety Officer for annual performance evaluation of all MRI imaging equipment.

EC.02.04.03, EP 23 Annual Performance Evaluation of all Nuclear Medicine Imaging Equipment.
Radiology, under the direction of the Radiation Safety Committee currently use qualified medical physicist and Radiation Safety Officer for annual performance evaluation of all Nuclear Medicine imaging equipment.

EC.02.04.03, EP 24 Annual Performance Evaluation of all PET imaging equipment.
Radiology, under the direction of the Radiation Safety Committee currently use qualified medical physicist and Radiation Safety Officer for annual performance evaluation of all PET imaging equipment.

EC.02.04.03, EP 25 Annual Performance Evaluation includes testing of image acquisition display monitors for maximum and minimum luminance, luminance uniformity, resolution, and spatial accuracy.
Radiology, under the direction of the Radiation Safety Committee currently use qualified medical physicist and Radiation Safety Officer for annual performance evaluation testing.

EC.02.04.03, EP 26 The hospital performs equipment maintenance on anesthesia apparatus.
Anesthesia, under the direction of the Nurse Administrator for Anesthesia, currently use a third party vendor for equipment maintenance on anesthesia equipment.

EC.02.04.03, EP 27 Meeting Healthcare Facilities Code Requirements

CE Policy #.007, .#020; NFPA 99 2012 Chapter 10
Clinical Engineering shall be in compliance with Chapter 10 of NFPA 99 2012 Edition regarding electrical equipment.

EC.02.04.03, EP 34 Annual Performance Evaluation of all Fluoroscopic Services.
Radiology, under the direction of the Radiation Safety Committee currently use qualified medical physicist and Radiation Safety Officer for annual performance evaluation of all Fluoroscopic equipment.

EC.03.01.01 A Medical Equipment Orientation and Education Program for Maintainers.
CE Policy #.014
1. Training - Written Programs - In accordance with EC.02.04.01, EP 3, there are written equipment-testing procedures and user training programs designed to manage the clinical and physical risks. All biomed equipment has a procedure assigned that refers to a specific testing procedure. These procedures are derived from manufacturer service manuals, which are required to be delivered at the time of our incoming inspection. Tasks may be modified per information obtained from our service program.

2. Maintainer Initial Training – Crafts persons are screened by a qualifying process during hiring that ensures they are properly trained to perform the work required. They are required to meet the initial job functions per County of Los Angeles job item # 6531. Supervisors are responsible to provide or arrange for training of their employees. Training will cover but not be limited to new employee orientation to specific work place safety aspects of their job, new assignments, and new procedures on equipment, which may present a safety hazard. The employee will also be instructed in the procedure of reporting an Unsafe Condition in the Medical Center and the procedure for reporting unscheduled maintenance and repair problems. Each employee also receives an annual competency evaluation that is kept on file at Human Resources.

3. Orientation & Continuing Training - In accordance with EC.03.01.01, Facilities Management documents craft training using the computerized HSPMS scheduled work order program. Training is documented on this sheet and placed on file. All records of training seminars and other equipment-related training are kept on file at the Clinical Engineering shop. Technicians are encouraged to attend vendor offered training programs. The types of training are listed, but will not be limited to the following:

- In- house training
- Self-instruction
- Computer based training
- Seminars and workshops
- Service school

The pre-purchase evaluation of new equipment will consider the availability of training for users and maintainers. Facility Management and the Clinical Engineer supervisor will schedule such training for their departments.

EC.03.01.01 EP 2 <u>A Medical Equipment Orientation and Education Program for Users</u>

CE Policy #.014

Each new member of the Los Angeles General Medical Center staff required to use medical equipment to fulfill job requirements participates in a general orientation program, which includes information related to the Medical Equipment program. Examples of such information include the general Medical Equipment program and general issues related to the use of medical equipment in the facility.

The Human Resources Department is responsible for conducting the general orientation program. The Human Resource Department records attendance for each new staff member who completes the general orientation program. Attendance records are maintained in the Human Resource Department. The Clinical Engineering department assists in the orientation when requested to do so.

User Training – New staff members receive a department–specific orientation to the department where they are assigned to work. Each department Manager is responsible for providing their new staff members with a department–specific orientation to the Medical Equipment program. Clinical Engineering gives a presentation on medical equipment in the New Employee Orientation and contributes to the annual reorientation handbook.

Nursing Education provides training in the clinical application of equipment. The training is documented in each area. The Clinical Engineering department does not have the qualified staff to train users in clinical applications of equipment. Nursing will request in-service training from the equipment vendor at the time of purchase. It is at this level that the capabilities, limitations, and special applications of the equipment are addressed.

The Clinical Engineering Department assists in the technical training upon request. Video aids and handouts are provided by Clinical Engineering to enhance this training. The need for training is assessed from our QA service call program, which identifies operator error and in-service requirements. A copy of our quarterly QA report includes this and is sent to our Safety Office and also the Environment of Care Committee.

Administration conducts monthly area rounds to identify staff deficiencies in safety issues and equipment management. Cooperation with our Safety Office enables our department to participate in Safety Fairs where we describe our department's function, address equipment safety issues, and hand out literature on identifying unsafe electrical conditions and equipment practices. These handouts also include our extension number for requesting service.

The Nursing Department conducts an educational Skills Fair at which time nurses are instructed by Nursing Education and equipment manufactures in the use of Medical Equipment.

EC.04.01.01 Monitoring Risk Based Performance Standards

CE Policy #.012, #.111, #.200

1. **Skills of staff:** Clinical Engineering participation in this standard is the mandatory training given to its technicians. The training work order is generated by the Clinical Engineering computer.

2. **Level of staff participation:** 100% in the preliminary acceptance, evaluation, preventive maintenance, and repair of all patient care equipment. The standard set forth by Clinical Engineering for Service Calls completion within the first 24 hours is 95%.

3. **Inspection Activities:** The Clinical Engineering staff participates 100% in environmental rounds that identify deficiencies. If a deficiency is found, a work order will be issued to have the responsible craft correct the problem. Each technician is assigned an area of responsibility for repair and preventive maintenance. Monthly work orders are issued for these areas and the technician is responsible for their completion as well as service requests from the area.

4. **Procedures for emergency and incident reporting that specify when and to whom reports are communicated:** A quarterly and annual Quality Assessment Report will be sent to Facilities Management, the Safety Office, and presented to the Hospital Safety Committee. This report will be a quantitative and verbal analysis of the Medical Equipment Program. Emergency (unscheduled) repairs will be called into the Clinical Engineering office, x95053 General Hospital Monday to Friday, 7:00a.m. to 3:30 p.m. Calls received on weekends and after hours at this number are referred to the Facility Management call center to be handled by the Building Engineers office. CE policy #.016 will be followed. EC.03.01.01, addresses this also. In the case of a patient related incident the procedure outlined in Medical Center Policy # 304 will be followed. The Bio-Med staff is aware of this policy and participates in their responsibility outlined in it.

5. **Equipment inspection, preventive maintenance and testing:** This is addressed under EC.02.04.01, EP 3 of this plan. Clinical Engineering has established a rate of 95% in completion of preventive maintenance. P.M. requirements will be based on the recommendations of the manufacturer or prior experience with the same or similar equipment. If no recommendations for maintenance are obtained from the manufacturer, repair history will be monitored and the device included in the program if required. Life Support equipment P.M. will be done to manufacturer recommendation, in house or contracted.

EC.04.01.01, EP 10 Procedures to Report, Investigate Medical Equipment Problems,

Failures and User Errors that adversely affect patient care or safety.

CE Policy #.012, #.017, .011 Los Angeles General Policy #300, #302, #304

In the event of an equipment problem that may be subject to the Safe Medical Devices Act of 1990, the policy and procedures of the facility risk manager will be followed. This policy appears in the Medical Center Policy Manual #304 and appendix 41 of the Clinical Engineering Policies and Procedure manual.

Equipment problems, failures and user errors are identified and documented in several ways. CE Policy #.012 addresses this requirement.

1. Equipment users have more contact with items than Facilities Management, and are the first resource for identifying problems. It is at this level that a documented service ticket is generated.

2. Nursing supervisors may observe repeated equipment problems and will request Clinical Engineering to evaluate the cause of the problem. This request must also be in the form of a service order to be documented in our HSPMS program.

3. Environmental Tours are scheduled with a team from Safety Office, Facilities Management, and Clinical Engineering Department. Equipment items are physically inspected and supervisors are questioned if they have any problems in the area. Work orders are issued for corrective action needed in the area.

4. Through the use of an ongoing HSPMS program, Clinical Engineering technicians constantly perform routine maintenance on equipment in various areas. Any repairs needed and have been over looked by staff are recorded by the technician and a service ticket is generated at the Clinical Engineering Department. The action taken by the technician will be documented on the ticket. Repairs needed by another craft will be forwarded through the Facilities Management Office.

A. Reporting Problems - In accordance with EC.04.01.01, EP 1, problems, failures, and user error are evaluated and a quarterly quality assurance report is given at the Environment of Care Committee. Information for this report is obtained from the HSPMS Quality Assurance tracking and report generator program. All service tickets are completed in the Clinical Engineering computer. Additional supporting information is in the Clinical Engineering CMMS equipment files. A description of the QA program appears in appendices 16-29 of the Clinical Engineering Policies and Procedure manual.

B. Resolving Problems - In accordance with EC.04.01.01, EP 1, the Environment of Care Committee reviews the QA report and recommends action to resolve problems appropriately.

C. Documenting Problems - In accordance with EC.04.01.01, EP 1, actions

recommended by the Environment of Care Committee are implemented to resolve problems. The Environment of Care Committee schedules a follow up review and evaluation of the resolution and these are documented in the minutes.

D. Evaluating Resolutions Effectiveness - In accordance with EC.04.01.01, EP 1, the Environment of Care Committee schedules a follow up evaluation for effectiveness and the committee may recommend continuing or supplemental action if needed. This process is documented in the Environment of Care Committee minutes.

5. Retiring Equipment:

A. Equipment salvaged or transferred - All electrically or mechanical operated Bio-medical items being sent to salvage or leaving the facility must be identified to Clinical Engineering. Supply Chain Operations or the equipment owners (units) will notify Clinical Engineering of salvaged equipment. Equipment will be stamped or tagged as salvage, on the equipment, that signifies the equipment can be removed by authorized salvage vendors. An inventory control form must be used when equipment is salvaged, transferred or loaned to other facilities.

B. Recommended Salvage - Equipment that is deemed un-repairable, not cost effective to be repaired or obsolete will be returned to the area where it was picked up. An inventory control sheet and justification for salvage will be included with the item. The returned unit will have an Out of Service tag attached. The area administrator will fill out the required paperwork and send it to the Inventory Control section of Supply Chain Operations Big General, Room 336. Inventory control will dispatch personnel to pick up the item and take it to a salvage area for disposal.

Deletion of Equipment from HSPMS System - The Clinical Engineering CMMS program will carry items recommended for salvage as OUT OF SERVICE until the Bio-medical tags, or the inventory control sheets verifying the disposal of the equipment are returned to Clinical Engineering. At this time, it will be entered into the HSPMS computer as salvaged equipment. These items will not be deleted until designated by the Clinical Engineering supervisor.

EC.04.01.01, EP 15 **Annual Evaluation of the Equipment Management Program**

Annual personnel evaluations are in place for all Clinical Engineering technicians which mandate competent levels of performance. These evaluations are available from the personnel office. The HSMS program will also track the productivity of each technician. The productivity and response to service calls are included in this evaluation. A copy of the Annual Assessment of Medical Equipment Management Program report is submitted to the E.C. committee each year.

Part of this information on performance is obtained from the Computer Service Call program

and QA report. The HSMS system report form generator provides all crafts with completed and uncompleted maintenance reports. The Clinical Engineering Department will maintain a 95% service call completion rate per month. A quarterly unable to locate equipment list is sent to Nursing Administration by the Clinical Engineering Department. This list identifies unable to locate equipment that is overdue for preventive maintenance by the Clinical Engineering Department. Quarterly reports are submitted to the Environment of Care Committee and an annual evaluation of the program is also submitted to the Environment of Care Co- Chairman.