

UW HEALTH JOB DESCRIPTION

CLINICAL ENGINEER ANESTHESIOLOGY

Job Code: 410015	FLSA Status: Exempt	Mgt. Approval: M.Kelley	Date: 7.2020
Department: Supply Chain-Healthcare Technology Management		HR Approval: J. Middleton	Date: 7.2020

JOB SUMMARY

Under the general direction the Director of Healthcare Technology Management, and in accordance with the UW Health Medical Equipment Management Plan, the Clinical Engineer Anesthesiology will independently manage equipment used by the members of the Department of Anesthesiology in the care of their patients. The equipment includes a wide variety of electrical, pneumatic, and mechanical equipment used for life monitoring, life support, and anesthetizing. Management of the equipment must ensure its immediate availability, accuracy, and reliability. This has a direct impact on patient and employee safe and on facilitating the smooth flow of the operating room schedule. The incumbent must assess and provide for the equipment needs of the Department of Anesthesiology. Goals include maintaining patient safety, providing adequate anesthesia equipment for unusual procedures and the critically ill, teaching residents, and conducting clinical research.

The position provides a unique capability within the department because of the required engineering background and knowledge of anesthesia equipment. The incumbent independently determines job projection methods based on knowledge and experience with anesthesia equipment and sound engineering principles. The job duties can vary due to changing conditions, with problems arising due to advances in technology and clinical care.

A crucial area of problem solving involves intraoperative equipment problems, which must be solved promptly. Decisions on how to proceed are made based on experience with life-support equipment, knowledge of the underlying principles of operation, and careful examination of the symptoms. There is little time to refer to outside sources. Since improper judgments may greatly affect the delivery of safe and reliable patient care, this work is performed under stressful conditions.

Equipment maintenance must be regularly evaluated for cost-effectiveness. New or replacement equipment purchases must be weighed for their cost versus the need to provide up to date, reliable equipment. Purchases in major areas, such as physiological monitors must be outlined several years in advance. Purchase decisions must be made between several competing vendors. Purchasing involves writing specifications to encourage competitive bidding while still maintaining a minimum standard, evaluating bid responses, determining which system will be reliable, accurate, and able to be updated over its life cycle. All purchases are suggested in compliance with UW Health purchasing requirements and capital budget processes.

Familiarity with codes and recommendations such as AAMI, ANSI, TJC, NFPA, UL, OSHA, and CDC are required. These regulations require significant interpretation because they are often expensive to implement, out of date, conflicting, unrealistic, or voluntary. Most are technical and require an engineering background and clinical experience to interpret.

The incumbent has contact with equipment manufacturers' personnel such as technical support, designers, product managers and applications specialists. These contacts involve both giving and receiving information as well as providing recommendations on equipment design, maintenance and repair.

The incumbent works with Faculty and Resident Anesthesiologists to solve equipment needs. Post-graduate Residents and CRNA's rely on the Clinical Engineer for expert advice on equipment operation, accuracy, problems, and underlying physical principals. The Faculty Anesthesiologists rely on the Clinical Engineer for consultation on clinical situations and to direct the overall equipment program.

The incumbent works with UW Health's Planning Design and Construction Department, and/or outside contractors, on new construction or remodeling of anesthetizing locations to provide for adequate facilities of monitoring and anesthetizing patients safely. Support is provided for Inpatient, Outpatient, and AFCH Surgical Services Departments as well as off-site locations where Anesthesia is provided.

MAJOR RESPONSIBILITIES

Technical Skill: Incumbent performs the following job responsibilities:

A. Coordinate Preventive Maintenance

- Design, coordinate, and supervise a preventive maintenance program for all anesthesia equipment.
- Determine practicality and cost-effectiveness of utilizing vendors or UW Health Clinical Engineering in-house staff.

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- Plan for training, test equipment, scope, and interval of regular preventive maintenance.
- Conduct preventive maintenance on critical medical and electronic equipment when outside maintenance is impractical, unavailable, or not cost-effective.
- Configuration, testing and verification of medical equipment data transferred into the electronic medical record, Healthlink.

B. Coordinate the Repair of Malfunctioning Equipment

- Plan for test equipment and training.
- Determine practicality and cost-effectiveness of utilizing vendors or UW Health Healthcare Technology Management in-house staff.
- Conduct repair on critical electronic and mechanical equipment when down-time must be minimized or when outside maintenance is impractical, unavailable, or not cost-effective.
- Real time coordination, trouble shooting, and resolution of anesthesia equipment issues including operator concerns, equipment failures, and data transfer into Healthlink.

C. Acquire and Implement New Equipment

- Develop and implement a capital equipment budgeting plan.
- Design and coordinate evaluation procedures for new equipment.
- Determine purchase specifications and make recommendations on competitive bids in compliance with UW Health purchasing requirements and capital budget processes.
- Set up and check new equipment and equipment updates for efficiency and safety for operator and patient.
- Design and provide in-service education materials for new equipment. Coordinate equipment educational programs for anesthesia personnel.

D. Ensure Patient and Employee Safety

- Pursue and implement new equipment approaches to monitoring and anesthetizing patients.
- Advise development of clinical applicability, human interface, and microprocessor software.
- Monitor the procedures and implementation of the electrical safety program for portable electrical equipment and the electrical power supply used in the operating room.
- Coordinate the oversight of operating room air pollution in order to reduce hazards to operating room personnel.

E. Provide Training and Education

- Design orientation and training for new equipment as well as hospital-wide safety programs specific to anesthesia equipment and locations.
- Provide orientation and training for new anesthesia personnel.
- Assist with creating and conducting new device implementation, training, and workflow enhancements for various groups, including Anesthesia Residents, Technicians, and other appropriate staff as needed.

F. Miscellaneous

- Resolve intraoperative malfunctions of life support and life monitoring equipment.
- Participate in planning of new operating rooms and new procedures such as intraoperative radiotherapy, MRI, and neuro-radiology intervention.
- Advises departmental committees on anesthesia equipment status and needs, equipment upgrades and/or emerging technologies, anesthesia equipment failures, recalls and corrective actions.
- Maintain state of competency in anesthesia clinical engineering by establishing self-development plan including journal review and educational conferences.
- Drive continuous improvement strategies in a wide array of department specific initiatives, including but not limited to equipment safety, cost reduction, patient safety protocols, and various other UW Health administrative and operational driven priorities.

ALL DUTIES AND REQUIREMENTS MUST BE PERFORMED CONSISTENT WITH THE UW HEALTH PERFORMANCE STANDARDS.

JOB REQUIREMENTS

Education	Minimum	Associate Degree in Electronics or applicable military education and experience. 2 years of relevant surgical equipment experience may be considered in lieu of degree or military education in addition to experience below. (Applicable military education: DD214 Form will
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		be required to verify relevancy)
	Preferred	Bachelor's Degree in Engineering or relevant field.
Work Experience	Minimum	Three years' experience with anesthesia equipment in an operating room environment.
	Preferred	• Four years' experience with anesthesia equipment. • Academic Medical Center experience. • Education and training - Leadership experience.
Licenses & Certifications	Minimum	
	Preferred	Certification as a Biomedical Electronic Technician (CBET)
Required Skills, Knowledge, and Abilities		• Knowledge of equipment used for physiologic monitoring, life support and anesthetizing. • Basic knowledge of life safety codes and their application in intraoperative and anesthetizing locations. • Ability to diagnose and repair failures of electronics and equipment used by anesthesia personnel. • Ability to organize and schedule preventative maintenance for anesthesia equipment. • Basic knowledge of Information Technology terminology, set-up and configuration. • Strong customer service and communication skills. • Ability to develop a budget and five-year plan for equipment used by Anesthesiology. • Ability to design and organize annual and on-going training and education.

AGE SPECIFIC COMPETENCY (Clinical jobs only)

Identify age-specific competencies for direct and indirect patient care providers who regularly assess, manage and treat patients.

Instructions: Indicate the age groups of patients served either by direct or indirect patient care by checking the appropriate boxes below. Next,

☐	Infants (Birth – 11 months)	☐	Adolescent (13 – 19 years)
☐	Toddlers (1 – 3 years)	☐	Young Adult (20 – 40 years)
☐	Preschool (4 – 5 years)	☐	Middle Adult (41 – 65 years)
☐	School Age (6 – 12 years)	☐	Older Adult (Over 65 years)

JOB FUNCTIONS

Review the employee's job description and identify each essential function that is performed differently based on the age group of the patient.

PHYSICAL REQUIREMENTS

Indicate the appropriate physical requirements of this job in the course of a shift. *Note: reasonable accommodations may be made available for individuals with disabilities to perform the essential functions of this position.*

Physical Demand Level		Occasional Up to 33% of the time	Frequent 34%-66% of the time	Constant 67%-100% of the time
☐	Sedentary: Ability to lift up to 10 pounds maximum and occasionally lifting and/or carrying such articles as dockets, ledgers and small tools. Although a sedentary job is defined as one, which involves sitting, a certain amount of walking and standing is often necessary in carrying out job duties. Jobs are sedentary if walking and standing are required only occasionally and other sedentary criteria are met.	Up to 10#	Negligible	Negligible
☐	Light: Ability to lift up to 20 pounds maximum with frequent lifting and/or carrying of objects weighing up to 10 pounds. Even though the weight lifted may only be a negligible amount, a job is in this category when it requires walking or standing to a significant degree.	Up to 20#	Up to 10# or requires significant walking or standing, or requires pushing/pulling of arm/leg controls	Negligible or constant push/pull of items of negligible weight
X	Medium: Ability to lift up to 50 pounds maximum with frequent lifting and/or carrying objects weighing up to 25 pounds.	20-50#	10-25#	Negligible-10#
☐	Heavy: Ability to lift up to 100 pounds maximum with frequent lifting and/or carrying objects weighing up to 50 pounds.	50-100#	25-50#	10-20#
☐	Very Heavy: Ability to lift over 100 pounds with frequent lifting and/or carrying objects weighing over 50 pounds.	Over 100#	Over 50#	Over 20#
List any other physical requirements or bona fide				

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occupational qualifications:	
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Note: The purpose of this document is to describe the general nature and level of work performed by personnel so classified; it is not intended to serve as an inclusive list of all responsibilities associated with this position.