Class Specifications
for the

MEDICAL TECHNOLOGIST SERIES

This series includes all positions the duties of which are to administer, supervise, or perform professional work in medical laboratory testing in various fields such as bacteriology, chemistry, cytology, hematology, histopathology, mycology, parasitology, serology, virology and blood bank and transfusion service operations.

Medical Technologists are involved in the conduct of laboratory tests in a hospital or other laboratory setting to assist physicians in the detection, diagnosis and treatment of diseases. The conduct of these laboratory tests requires the application of professional judgment and knowledge of procedures and techniques obtained through training at the college level, and advancements in laboratory science have caused a continuing growth and expansion of the volume and intensity of work required. Medical technology services are usually under the direction of a Pathologist or other physician.

In a small hospital, positions in this series are assigned the conduct of laboratory tests in the various fields; whereas, in the larger hospitals, a laboratory is usually divided into a number of fields. However, even in a large laboratory, medical technologists do conduct laboratory tests in all fields for which the laboratory exists on the basis of stand-by and relief duty. The major fields in a laboratory are briefly described below:

Bacteriology: This field concerns the isolation and identification of bacteria present in body fluids, exudates, transudates, skin scrapings, autopsy and surgical specimens; testing sterility of surgical linens, supplies, solutions and conducting air contamination surveys in the operating room; and testing for the efficacy of antibiotics against various disease-causing bacteria.

Chemistry: This field concerns the performance of chemical tests and analysis of body fluids, excretions, tissues and other materials related to clinical medicine; investigating chemical processes involved in the functioning and malfunctioning of the human body; and study of the effects of chemical compounds upon physiological and biochemical functions of the body to provide information on optimum methods of treating pathological conditions.

Histopathology: This field concerns work involved in the preparation of thin sections of human tissues for microscopic examination, including the fixing, dehydrating, cleaning, infiltrating, embedding, sectioning, staining and mounting of such tissues.

Work performed in this field is used in diagnosis by a Pathologist or other medical officer to determine the presence and nature of pathological conditions and the structural and functional changes arising from such conditions.

Serology: This field concerns laboratory tests on blood serum, spinal fluid, urine and synovial fluid for the presence of specific antibodies in blood serum, spinal fluid and other biological specimens.

Mycology: This field concerns the isolation and identification of fungi present in specimens of body fluids, exudates, transudates, hair, skin or nail scrapings, autopsy and surgical specimens, and the testing of the efficacy of antibiotics against pathogenic fungi.

Hematology: This field concerns work in the analysis of blood, primarily in its morphological characteristics including the identification and enumeration of cellular elements, results of which are used as a basis for treatment of diseases.

Parasitology: This field concerns laboratory tests on feces, blood smears and other biological material for the detection and identification of parasites, ova and occasionally the examination and identification of external parasites and disease-carrying insects.

Typically, a laboratory in a hospital setting conducts tests in the aforementioned fields. However, this does not preclude such other fields as those mentioned in the introductory paragraph.

Medical Technologist classes are defined in terms of the nature and scope of responsibilities and complexity of duties assigned. These are described in relation to the factors of nature and variety or scope of work; supervision received; supervision exercised; originality required; nature and scope of recommendations, decisions, commitments and conclusions; and knowledge and abilities required to perform the work. Each factor is not necessarily significant or pertinent in each class level, or they may be combined in the class specifications to improve the conveying of meaning or for the sake of brevity.

(This series replaces the following classes)
Medical Laboratory Technician I 5.495
Medical Laboratory Technician II 5.500

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MEDICAL TECHNOLOGIST II 5.490

Duties Summary:

Performs standard laboratory tests in the various fields of medical technology; and performs other duties as required.

Distinguishing Characteristics:

This class involves the performance of a wide range of laboratory tests in the various fields of medical technology in accordance with standard techniques and well-defined procedures and policies under the supervision of a higher-level Medical Technologist. Supervision received becomes more general as proficiency is gained and as an incumbent is able to operate independently on a regular basis and in emergencies. Performance of special and more complex tests may be required in assisting a higher level Medical Technologist in emergency conditions or for purposes of training, under close supervision.

Typical Duties:

Performs hematological, biochemical, parasitological, bacteriological, immunological, and serological work, including typing and cross-matching of blood and urinalysis; takes blood from various types of patients including psychiatric and the mentally retarded; does blood counts, reticulocyte and platelet counts, hemoglobins, hematocrits, sedimentation rates, and makes differential counts describing the various types of cells present as to their morphological characteristics; examines fecal, urine, blood and other specimens for the presence of parasites and ova and identifies them; performs various qualitative and quantitative biochemical tests on blood, serum, plasma, urine, feces, spinal fluid and other body fluids, including blood sugars, calciums, urea nitrogens, creatinines, transaminases, sodium, potassium, chlorides, CO_2 cholesterols, etc.; examines fecal specimens, urine, blood, spinal fluid, serum, pus lesion swabs, throat swabs, respiratory secretions, exudates, transudates and other body fluids for such diseases as tuberculosis, pneumonia, undulant fever, meningitis, diphtheria, gonorrhea, septicemia, typhoid, bacillary dysentery, streptococcal and staphylococcal and other infections; makes colony counts on urine specimens and on plates exposed in surgical areas; performs sensitivity tests on micro-organisms; may take electrocardiograms, X-rays and various other tests such as pregnancy tests, tests for rheumatoid arthritis, etc.; may instruct and oversee laboratory helpers and others in performing the cleaning of utensils and work areas; keeps records and submits reports.

Knowledge and Abilities Required:

Knowledge of: Basic principles and practices of medical technology; fundamental principles of chemistry and the biological sciences.

Ability to: Use and care for laboratory equipment and apparatus; perform laboratory tests accurately and attend to required details for extended periods of time; keep records and prepare reports; make mathematic calculations; give and receive oral and written instructions; deal effectively with patients and hospital staff.

MEDICAL TECHNOLOGIST III 5.494

Duties Summary:

Performs laboratory tests in one or more specialized fields of medical technology; and performs other duties as required.

Distinguishing Characteristics:

This class involves the performance of the full range of laboratory tests in one or more fields including technical responsibility for the particular area or areas of laboratory services assigned. Work is performed within a framework of established policies and procedures, but judgment is regularly required in the selection of procedures and techniques and the evaluation of results. Work is performed under the general supervision of a top-level Medical Technologist, and a Medical Technologist III may assign and review the work of a lower-level technologist, laboratory helper, or other assistant or assistants.

Typical Duties:

Plans and organizes the services required of a section of a large laboratory pertaining to one or more fields, and collects specimens and performs the various tests and examination analysis required; schedules work with various wards; conducts surveys, provides technical assistance in research and investigative programs; collects additional samples; calibrates instruments and equipment, and standardizes solutions; except during regular working hours, makes arrangements with the Pathologist to schedule autopsies; may speak to groups of hospital personnel or students about medical technology in order to create better understanding and more efficient methods of interrelated activities and work; keeps records and submits reports.

Knowledge and Abilities Required:

Knowledge of: In addition to knowledge required at the next lower level, work at this level requires a thorough knowledge of the principles and practices of medical technology pertinent to the assigned field or fields.

Ability to: In addition to abilities required at the next lower level, work at this level requires the ability to plan, organize and schedule work activities to provide the services required of a section of a large laboratory.

MEDICAL TECHNOLOGIST IV 5.498

Duties Summary:

Conducts medical technology services in a hospital or other laboratory setting; and performs other duties as required.

Distinguishing Characteristics:

This class involves responsibility for providing medical technology services in a hospital or other laboratory setting, under the direction of a physician or medical director. Included in the work are the establishment of procedures and maintenance of a laboratory unit, and the performance of laboratory tests. The scope of the operation typically requires a single position, that of a Medical Technologist IV; but may include one or two helpers or other similar assistants.

This class may also include positions which perform the most difficult and advanced tests, examinations and analysis in one or more specialized fields of medical technology, and assist in the general operation of a large laboratory. The work regularly includes the testing and use of new and unusual procedures requested by physicians requiring a continual awareness of advances in medical technology and a search of the literature, the establishment, review and revision of laboratory methods, procedures and techniques; and assisting in instructing and overseeing all other laboratory staff.

Typical Duties:

1. Plans and organizes the services of a small laboratory and collects specimens and performs the various tests, examinations and analysis required; performs special analysis such as chromosome analysis, photomicrography, tests for sex chromatic anomalies or tests for Hansen's disease; requisitions equipment and supplies; establishes procedures; keeps records and prepares reports.

2. Searches literature for new and/or unusual procedures requested by physicians and tests reliability and procedures for practicality; reviews the literature, tests and recommends changes in technical methods, procedures and techniques employed in the laboratory; assists in reviewing operating procedures; instructs and oversees other staff

members in behalf of a top-level technologist and serves in his absence; may testify in court; keeps records and prepares report.

Knowledge and Abilities Required:

Knowledge of: In addition to the knowledge required at the next lower level, work at this level requires a working knowledge of the overall requirements for effectively providing medical technology services in a hospital, institution or agency; and knowledge of trends in medical technology.

Ability to: In addition to abilities required at the next lower level, work at this level requires the ability to review and develop the services of a laboratory, maintain a continual awareness of current developments in medical technology and provide leadership in maintaining adequate services.

MEDICAL TECHNOLOGIST V 5.502

Duties Summary:

Plans, organizes, coordinates, reviews and directs a large laboratory in a hospital or other laboratory setting; and performs other duties as required.

Distinguishing Characteristics:

This class involves responsibility for a large laboratory providing medical technology services in a hospital, institution or other laboratory setting, under the direction of a medical director or other physician. A position in this class includes the maintenance of effective relationships with staff and consultant physicians and others regarding services requested and rendered, supervising a staff of several medical technologists in charge of assigned sections and carrying out various activities required for the effective management of the laboratory such as budget estimating, seeing that adequate supply levels are maintained, and recommending equipment purchases.

Typical Duties:

Plans, organizes, coordinates, directs and reviews all activities of a laboratory; maintains the overall quality and quantity of services provided; makes assignments and maintains effective relationships with and between subordinates; makes performance evaluations on subordinates; prepares budget estimates and justifications, obtains approval for equipment and supplies, and prepares requisitions, keeps inventory; attends general hospital meetings and maintains effective relationships with other hospital units; gives consultations and advice in one or more fields of specialty, reviews and revises operating procedures; reads technical literature and keeps abreast of

developments in medical technology, maintains records and prepares records and reports.

Knowledge and Abilities Required:

Knowledge of: In addition to knowledge required at the next lower level, work at this level requires a thorough knowledge of the overall requirements for effectively providing medical technology services in a hospital, and knowledge of the principles and practices of supervision.

Ability to: In addition to abilities required at the next lower level, work at this level requires the ability to organize, coordinate and direct the services of a large laboratory, maintain effective relationships with subordinates, and work with other hospital personnel in providing effective services.