TS-72 February 1968

General Schedule
Position Classification Standards

WCPS-2 August 2002

POSITION CLASSIFICATION STANDARD FOR PATHOLOGY TECHNICIAN SERIES, GS-0646

Workforce Compensation and Performance Service

Theodore Roosevelt Building 1900 E Street, NW Washington, DC 20415-8330 Classification Programs Division

Pathology Technician Series

GS-0646

TABLE OF CONTENTS

SERIES DEFINITION

This series includes positions which involve technical work subordinate to the work of pathologists or other physicians (or other professional personnel) who make the final diagnostic examinations of specimens of human tissues and/or cell preparations. Technician work in histopathology involves preparing thin sections of tissue specimens including fixing, clearing, infiltrating, embedding, sectioning, staining, and amounting. Technician work in cytology involves preparing, staining, and examining microscopically specimens of body fluids, secretions, and exudations from any part of the body to determine whether cellular structure is normal, atypical, or abnormal. Positions in this series require a practical knowledge of the techniques of anatomical laboratory practice in one or both of the areas of laboratory work (i.e., histopathology and cytology) and of the chemistry, biology, and anatomy involved.

This is a new series. The establishment of the Pathology Technician Series, GS-0646, revises the coverage of the Medical Technician Series, GS-0645, with respect to positions involving the examination of cell and tissue. It also revises and supersedes those parts of the standard for the Medical Technician Series, GS-0645, issued in June 1958, which related to positions in the specializations of cytology (cell structure) and histopathology (tissue work).

INTRODUCTION

Technician positions performing work in cytology or in histopathology require markedly different knowledges and skills from those of other technician positions in the pathology service. Both cytology technicians and histopathology technicians are identified with anatomical pathology and are usually located within a separate "section" of the pathology service. They perform technical support work subordinate to a pathologist. Both require knowledges and skills in staining procedures which are closely allied and similar. However, at grades GS-4 and above each of these areas of work requires distinct and specialized knowledges.

EXCLUSIONS

The following categories of positions are excluded from this series:

1. Positions requiring the application of professional knowledges and skills of anatomical pathology or another field of medicine or of other professional fields are classified in the appropriate professional series, e.g., Medical Officer Series, GS-0602, Medical Technologist Series, GS-0644. For a full discussion of distinctions between medical technologist positions and medical or pathology technician positions, see the position-classification standard for the Medical Technologist Series, GS-0644.

2. Positions the paramount duties and responsibilities of which are to provide technical assistance and related services to pathologists or other medical officers during autopsies are classified in the Autopsy Assistant Series, GS-0625.

3. Positions the paramount duties and responsibilities of which are to perform nonprofessional technical work which involves primarily specimens of animal tissues and cell preparations in a biological research laboratory environment are classifiable in the Biological Technician Series, GS-0404.

4. Positions the paramount requirements of which are skill and experience in trades, crafts, or manual labor occupations are exempt from the General Schedule System. Duties reflected in this standard at the GS-1 and GS-2 levels generally require the application of manual skills as the primary feature of the position. However, when such positions are established by management as a part of a career ladder in training for the skilled technician positions requiring the specialized knowledges outlined in the series definition, they are included under the General Schedule System.

5. Positions the paramount duties of which are to perform nonprofessional technical work in clinical laboratory testing in one or more areas of work such as blood banking, hemistry, hematology, or microbiology medical technician work are classified in the Medical Technician Series, GS-0645.

   Note: Positions which combine cytology technician or histopathology technician work with hematology, serology, blood banking, chemistry, or microbiology medical technician work are classified in the Medical Technician Series, GS-0645.

SPECIALIZATIONS AND TITLES

Titles and specializations are based on the specialized areas of work within the field and represent differences in the duties, responsibilities and knowledges required for their performance.

Pathology Aid applies to positions at grades GS-1, 2, and 3 which involve more routine assignments in either the examination of cell structure (exfoliative cytology) or the preparation and examination of tissue (histopathology).

Cytology Technician applies to positions at GS-4 and above which involve preparing, staining, and examining under the microscope slide samplings of cell preparations to trace clues to disease or other abnormalities in the cell structure. The reports of the examination and the marked slides are reviewed by a pathologist.

Histopathology Technician applies to positions at GS-4 and above which involve preparation of tissue specimens for diagnostic examination by the pathologist. Most positions involve preparation of tissue specimens for light microscopic examination although a few positions may be engaged in preparing tissue specimens for electron microscopic examination and may include preliminary examination under the electron microscope subject to final examination by the pathologist.

Pathology Technician applies to positions at GS-4 and above to cover positions which involve assignments in both cytology and histopathology technician work where each kind of work performed is of the same grade level. There are very few such positions because typically assignments involve exclusively cytology or exclusively histopathology rather than a combination extending to both areas.

The word *"Supervisory"* is to be prefixed to the above titles for positions which duties and responsibilities are of such significance as to require supervisory qualifications.

Supervisory positions are included in this series but not described in the grade-level portion of this standard. of the General Schedule Supervisory Guide should be used to evaluate such positions.

CLASSIFICATION FACTORS

This standard provides grade-level guides for nonsupervisory anatomical pathology technicians. It is written to apply directly to anatomical pathology laboratory work. It applies to such work which is either in direct support of patient care or in support of medical research.

Two factors differentiate among grade levels of pathology laboratory aid and technician positions: *Nature of the Assignment and Control over the Work.*

Qualifications Required and Personal Work Contacts are taken into account and reflected in the other factors. For example, some cytology technician positions involve contacts to collect specimens. Such contacts are inherent in the nature of the work and are so related to the techniques involved in collecting the specimens and performing the tests and examination on the specimens that it is not feasible to separate them from the complexity and responsibility of the assignment. Therefore, *Qualifications Required and Personal Work Contacts* are not treated under separately identified factors.

1. *Nature of the Assignment*

This factor measures the difficulty and complexity of the tests and examinations performed. It also covers the skills, knowledges, and judgment required to perform them. The nature of the assignment includes such elements as the technical complexity of the procedures, the level of he skills and knowledges required, and significance and influence of the results. For example, the test and examination procedures range from the simplest tissue preparation to the most complex staining procedure which will illustrate the desired tissue components. The latter involves very precise chemical treatment and microscopically controlled differentiation of tissue sections.

At each of the technician grade levels, the grade-level definition is discussed in terms of illustrative examples of tests and examinations characteristic of the level of difficulty and responsibility at the grade. These illustrations are not intended to be restrictive or complete. Future technological and automation developments may alter the level of difficulty or responsibility for the technician performing the work. New tests will certainly be added

and established ones may be discontinued. The character of the difficulty and complexity of the work, rather than any specific illustration, should be given primary attention in evaluating any particular position.

An individual position is evaluated in terms of the actual difficulties and responsibilities involved in that assignment rather than in terms of the functions of the particular laboratory or laboratory section in which it is located. For example, a position located in a reference laboratory or in a laboratory having the full range of anatomical pathology laboratory services may, in fact, involve performing relatively routine tests and examinations.

2. *Control over the Work*

This factor covers the availability of guidelines and instructions, and the direction, control, and guidance exercised by pathologists, medical technologists, and/or supervisory pathology technicians. It includes the kind and degree of supervision over work during its performance and the nature and extent of the review of reports of tests, examinations, and determinations performed.

The pathologist has the ultimate responsibility for the laboratory findings and for any decision made within the laboratory based on these findings. Therefore, all laboratory work is subject to review by the pathologist. The extent of this review varies with the kind of test involved, and confidence, trust, and reliance the pathologist places on the individual technician and on any intermediate professional supervisor. As the individual technician demonstrates proficiency, skill, competence, and reliability, he is accorded more and more freedom and finality. He is held responsible for the accuracy and reliability of the results of the tests he performs. However, he cannot relieve his supervisor and/or the pathologist of responsibility.

Note: It may be well to bear in mind that the cytology function is the only one in the laboratory which permits the technician to participate in the diagnosis of the laboratory findings.

EVALUATION NOTES

1. *Specific Grade-level Coverage*

This standard includes criteria for use in classifying nonsupervisory clinical laboratory aid and technician positions from GS-1 through GS-7. This range portrays nonsupervisory performance level typical of the occupation as a whole. Those positions which clearly and significantly exceed the criteria for the grade GS-7 level as depicted in the standard may be classified by extension of this material.

2. *Automated Tests and Examinations*

The trend toward automation of medical laboratory tests and examinations is having a definite impact on medical laboratory positions. Responsibility for monitoring a machine which performs one or more tests and examinations may very well be a different kind and level job than

responsibility for performing the same tests and examinations manually. The grade levels in the standard are based on the difficulty and complexity involved in performing the tests and examinations manually, and the level of skills and knowledges required. The appropriate level for monitoring the automated processes depends upon the relative difficulty and complexity of the duties involved. Does the technician push a button and read the results? Or must the technician calibrate the equipment? What is his role in installing new automated equipment? Is there a difference in the knowledge level in installing the equipment than in operating and maintaining it? Is the level in either case different from the level of performing the tests manually? The diversity of equipment, the kinds of tests which have been automated, and the probable accelerated pace of automation in the near future makes impractical development of evaluation criteria for automated procedures at the present time.

3. *Concepts of Illustrative Examples of Work*

A. At each of the technician grade levels, the grade-level definition is supplemented in terms of illustrative examples of tests and examinations characteristic of the level of difficulty and responsibility at the grade. These illustrations are not intended to be restrictive or complete. Future technological and automation developments may alter the level of difficulty or responsibility for the technician performing the work. New tests will certainly be added and established ones may be discontinued. The character of the difficulty and complexity of the work rather than any specific illustration should be given primary attention in evaluation any particular job.

B. Most position-classification standards attempt to avoid the technical language of the occupation and favor instead language which is easily understood by nontechnical people as well as those in the occupation. There is always a need to be both brief and precise. Because of the nature of medical laboratory work, it is virtually impossible to achieve both by expressing in plain language the tests and examinations which are typical of a particular grade level. Therefore, in this standard, grade levels are first defined in nontechnical descriptive language and then illustrated using technical terminology. The technical terms used are in common use in medical laboratories. They are also well understood by personnel specialists who serve the laboratories.

ORGANIZATION OF THE STANDARD

This standard consists of three parts:

Part I is applicable to nonsupervisory *Pathology Aid* positions at grades GS-1, GS-2, and GS-3.

Part II is applicable to *Cytology Technician* positions.

Part III is applicable to *Histopathology Technician* positions.

PART I. PATHOLOGY AID POSITIONS

PATHOLOGY AID, GS-0646-01
PATHOLOGY AID, GS-0646-02

The grade-level criteria for Medical Laboratory Aid GS-0645-1/2 positions are directly applicable to Pathology Aid positions in the same grade levels.

PATHOLOGY AID, GS-0646-03

Nature of the Assignment

Pathology Aids GS-3 working in cytological laboratories prepare slides to display cellular contents of a variety of samples of specimens using care and skill not to rupture or otherwise destroy cells, after the appropriate processing procedures have been specified by the supervisor. As knowledge of the work increases, they may prepare staining solutions and stain specimens, following specific guides and instructions furnished by the supervisor.

Pathology Aids GS-3 working in the histopathology area of the laboratory perform a number of steps in routine preparation of specimens such as embedding and cutting tissues, staining tissues with standardized stains (e.g., hematoxylin and eosin), and mounting slides.

Control over the Work

The supervisor checks work during progress and spot checks finished slides to assure adequacy for subsequent microscopic examination, and furnishes specific instruction and guidance on any restaining, etc., necessary to assure quality of finished work. As the pathology aid demonstrates skills, knowledges, and the ability to meet standards of quality and quantity of work completed, the supervisor relies upon him to follow written guides with little or no instruction or demonstration and reviews only the finished slides.

PART II. CYTOLOGY TECHNICIAN POSITIONS

CYTOLOGY TECHNICIAN, GS-0646-04

GS-4 cytology technicians are primarily distinguished from those at GS-3 in that they are responsible for the microscopic study of cervical slides whereas GS-3 technicians work primarily on those tasks that are preparatory to microscopic study.

Nature of the Assignment

GS-4 cytology technicians typically prepare, fix, stain, and examine microscopically smears for cancer detection. In some laboratories, GS-4 assignments typically involve preparing, fixing, staining, and studying microscopically vaginal and cervical smears.

Through microscopic study, the technician determines whether the cells are normal, unsatisfactory for examination, or positive for malignant cells. On negative and unsatisfactory specimens the technician releases reports directly to the requesting clinician, with only occasional review by the supervisor. On slides which show evidence of abnormal cell structure the technician marks significant areas and prepares a report of findings and submits the slides and report to the pathologist.

Some Cytology Technicians GS-4, in addition, perform more difficult work in a trainee capacity.

Control over the Work

GS-4 cytology technicians are given instructions on every procedure. The supervisor outlines the procedure for any new test and defines the standard to be maintained. He provides specific criteria for determining whether cells are normal or abnormal. The supervisor occasionally spot checks work in progress and occasionally reviews slides which the technician reports as negative. The supervisor carefully reviews those slides the technician reports as indicating abnormal or atypical cells.

CYTOLOGY TECHNICIAN, GS-0646-05

GS-5 cytology technicians primarily differ from those at GS-4 by the responsibility for determining the degree of abnormality of cell structure in cervical smears which they study microscopically; GS-4 technicians determine only whether the cell structure is normal or abnormal. At the GS-5 level, while all work is reviewed by the supervisor or the laboratory director, the work is not ordinarily reviewed in progress other than check through quality control techniques.

Nature of the Assignment

GS-5 cytology technician assignments typically include the preparation (fixing and staining) and microscopic examination of slides of vaginal and cervical smears. The technician, in addition to determining whether the slides are negative or positive for malignant cells, also determines the degree of abnormality in the specimens that show abnormal cell structure (i.e., atypical-no repeat, atypical-follow-up, suspicious, suggestive, or positively malignant). They may also prepare and examine specimens from other parts of the body.

The Cytology Technician GS-5 is required to have a basic knowledge of exfoliated cells and the range of their variability in fluids and secretions from the various cavities of the body.

Control over the Work

Typically, technical assistance is constantly available to GS-5 cytology technicians so that any questions they may have regarding interpretation of the smears may be discussed.

The supervisor typically reviews the slides which the technician has marked. He discusses them with the technician. He also reviews closely and discusses the degree of abnormality which the

technician has reported. Generally, there is only a spot check of marked slides and report prior to submission to the pathologist. Reports of negative slides are spot checked before the report is sent to the clinician.

There are instructions governing the GS-5 cytology technician's assignment. These instructions may be written or oral. The supervisor provides specific criteria for the determinations the technician makes regarding normality or the degrees of abnormality.

CYTOLOGY TECHNICIAN, GS-0646-06

GS-6 cytology technicians differ from GS-5 technicians in that they are responsible for a variety of complex tests of specimens from any part of the body for which detailed procedures do not apply to many aspects of the work. They work under general supervision whereas GS-5 technicians are under technical supervision with technical assistance immediately available at all times.

Nature of the Assignment

GS-6 cytology technicians usually prepare and examine microscopically many types of cytological specimens from any part of the body, including those from the urinary tract, respiratory tract, digestive system, pleural fluid, peritoneal fluid, pericardial fluid, direct smears from lesions and ulcerated areas and buccal slides as well as specimens from the female vaginal tract. After the cytology technician's reports of microscopic study are reviewed by the pathologist, they are used by clinicians to evaluate the morphologic effects of various therapeutic agents or modes of treatment.

Cytology Technicians GS-6 must keep abreast of current developments in their field by reading the literature. They make suggestions for changes in technique and procedure. With permission from the supervisor, they try out new procedures, compare them with those being used, and report results to the supervisor. GS-6 cytology technicians are often responsible for demonstrating and discussing procedures and techniques with pathology residents or others who are in training at the hospital. These duties involve significant personal work contacts with pathologists, physicians, and residents.

Control over the Work

Written guidelines and oral instructions do not cover many aspects of the GS-6 cytology technician's assignment. For example, he is expected to know what procedures to follow in preparing and examining a specimen of unusual origin or condition even though these procedures are not covered in the laboratory manual and are not covered by oral instructions. He knows these procedures or is able to interpolate, by virtue of his experience or from the general literature rather than by instruction or laboratory manuals.

GS-6 cytology technicians typically work under the general direction and guidance of a medical technologist or a pathologist. GS-6 technicians typically schedule their own work, assure that the workload is kept current, and process emergency work with only general supervision. Work

in demonstrating and discussing techniques with pathology residents and others in training is reviewed in terms of overall results.

Suggestions for change in the details of techniques or procedures are reviewed and evaluated by the supervisor prior to their use on a regular basis. All work is subject to final evaluation and review by the pathologist.

For the GS-6 cytology technician, the pathologist's review is usually concentrated on the slides which the technician has marked for his attention and on the technician's reports on the tests. This review and evaluation is done before the reports are submitted to the attending clinician. The pathologist spot checks negative reports which the technician sends to the attending clinician.

CYTOLOGY TECHNICIAN, GS-0646-07

The primary distinction between GS-7 cytology technicians and those at GS-6 is that the GS-7 level requires greater skill and knowledge to perform specialized, difficult, delicate, and demanding procedures and techniques as described below.

Nature of the Assignment

GS-7 cytology technicians perform extremely difficult, intricate, delicate, and demanding procedures in preparing and examining a great variety of cytological specimens from any part of the body. These advanced procedures require a high degree of skill and proficiency as well as unusual insight and knowledge of the procedures and techniques applicable to the services provided by the laboratory. As at the GS-6 level, GS-7 technicians determine not only negative or positive (normal or abnormal) but also the degree of abnormality. However, at the GS-7 level, these determinations require extremely fine distinctions which can only be made on the basis of very broad experience and a high level of expertise. GS-7 technicians typically release reports on negative and unsatisfactory specimens directly to the referring physician.

The work at this level typically involves significant personal work contacts with pathologists and other physicians.

Control over the work

Written and oral instructions do not cover many aspects of the GS-7 cytology technician's assignment. He must extend and expand known procedures and techniques covering related situations to the assignment at hand. He must interpret, modify, and adapt instructions to apply to new and unusual situations.

GS-7 cytology technicians typically are under the general supervision of a pathologist who is legally responsible for reviewing findings and for the final decision. However, the pathologist almost invariably finds that the technician's markings and his reports indicate such a high degree of understanding, knowledge, judgment, and insight in differentiating cells and cell structure through microscopic study that his findings can be accepted with only occasional changes or

additions. Because of the number of slides prepared and examined in the laboratory and because of the great confidence in the technician's skill and judgment, the pathologist seldom spot checks reports on negative and unsatisfactory specimens which the technician has released directly to the referring physicians.

PART III. HISTOPATHOLOGY TECHNICIAN POSITIONS

HISTOPATHOLOGY TECHNICIAN, GS-0646-04

Histopathology Technicians GS-4 are primarily distinguished from pathology technicians at GS-3 by responsibility for performing work requiring demonstrated skill in the cutting of a variety of tissues and the use of a few relatively uncomplicated special stains as well as the more common and standardized stains.

Nature of the Assignment

Histopathology Technicians GS-4 are assigned to relatively standardized preparation of slides of tissues for light microscopic study involving fixation, dehydration, embedding, sectioning, staining, and mounting. Work at this level includes, for example, the use of a few relatively uncomplicated special stains, and the preparation of standard histologic sections. Specimens processed typically do not include nerve, brain, tooth, or eye tissues, or those that are unusually large or small.

Control over the Work

GS-4 histopathology technicians are normally provided detailed instructions on the work procedures. These instructions may be oral or written. The supervisor outlines the complete procedure for any new technique and defines the standards to be maintained. The supervisor or other higher-grade technician is constantly available for guidance as necessary. Although the technician typically performs his work with only occasional spot checking during processing, his finished slides are reviewed for quality and accuracy.

HISTOPATHOLOGY TECHNICIAN, GS-0646-05

GS-5 histopathology technicians differ from those at GS-4 in that they perform work requiring a variety of relatively difficult techniques and procedures (e.g., embedding, precise positioning, and cutting of minute pieces of tissue, cutting serial sections). Technical assistance is always available.

Nature of the Assignment

Histopathology Technicians GS-5 performing work for light microscopic study prepare and use special stains which do not require microscopic differentiation; embed and cut a variety of tissues including brain, bone, eye, and unusually small or delicate specimens; cut a large number of serial sections; prepare serial sections from various tissues. Some GS-5 positions may involve cutting and staining frozen sections for rapid diagnosis by the pathologist during surgery.

GS-5 histopathology technicians must have some knowledge of chemistry and anatomy; and must be skilled in handling the different kinds of tissue.

Some Histopathology Technicians GS-5 for training purposes prepare tissues for electron microscopic study.

Control over the Work

Although the tests are relatively difficult and complex, they are typically standardized. This means that there is a uniform or standardized and commonly agreed upon procedure for accomplishing the test including the steps, sequence of steps, strength of solutions, etc. In a given laboratory the technician is supplied with precise and detailed instructions for performing the test. These instructions may be oral or written.

GS-5 histopathology technicians performing work in preparing slides of specimens for light microscopic work, work under general technical supervision with only spot-check review of slides. Work involving the preparation of frozen sections for rapid diagnosis by the pathologist during surgery and work involving the special staining procedures is performed under close supervision during all phases.

GS-5 histopathology technicians performing work in preparing tissue specimens for electron microscopic study are closely guided and supervised in acquiring the very fine degree of skill necessary for such work.

HISTOPATHOLOGY TECHNICIAN, GS-0646-06

GS-6 histopathology technicians are distinguished from GS-5 primarily in that they work under general supervision in performing a variety of procedures and techniques in preparing histologic slides.

Nature of the Assignment

GS-6 histopathology technicians typically perform procedures in preparing histologic sections requiring advanced and nonstandardized techniques and procedures. They prepare frozen tissue sections during surgery. The tissue may be from any part of the body and may require

delicate and precise preparation. They prepare and use a variety of nonstandard or special stains, some of which require microscopic differentiation. They are responsible for cutting serial sections of complicated anatomical structures requiring precise positioning and delicate preparation. They may perform duties in training to prepare tissue for electron microscopic study. These duties require practical understanding of the chemistry, biology, and anatomy involved. This work often involves significant personal work contacts with physicians, scientists, and pathologists.

Control over the Work

For Histopathology Technicians GS-6 there is very little review of the work upon completion. Assistance and guidance is provided in the microscopic evaluation of nonstandard or specially stained tissues.

During preparation of rapid frozen sections during surgery typically the GS-6 histopathology technician works under the general supervision and guidance of the pathologist. When they prepare tissue for the electron microscope GS-6 technicians are closely guided and reports are fully discussed to increase their understanding of differentiating cellular structure of specimens and to improve their skill.

Written guidelines and oral instructions do not cover all aspects of the GS-6 histopathology technician assignment. For example, he is expected to know what procedures to follow for preparing and staining a specimen for fungus, for bacteria, or for amyloid when requested by the pathologist. He knows by virtue of his experience or from the general literature, not by instruction or laboratory manuals.

HISTOPATHOLOGY TECHNICIAN, GS-0646-07

The primary distinction between GS-7 histopathology technicians and those at GS-6 is that the GS-7 level requires greater skill and knowledge to perform specialized, difficult, delicate, and demanding techniques and procedures as described below.

Nature of the Assignment

The GS-7 histopathology technician performs a variety of extremely difficult, delicate and complex tissue tests including the preparation of frozen sections for rapid diagnosis of tissue during surgery. Without supervision GS-7 histopathology technicians are often responsible for preparing tissue for electron microscopic study. Another assignment may be that of taking photomicrographs.

The tissue specimens with which the GS-7 works may be of any size and condition from any part of the body. He prepares a wide variety of special stained slides requiring many complex and delicate processes (for example, alteration and standardization of the pH and concentration of the chemical solutions used in microscopic differentiations and control of the staining reaction to achieve precise staining results).

After the histopathology technician examines the slides microscopically, he accepts or rejects slides on the basis of proper staining reactions.

The GS-7 histopathology technician must be proficient in recognizing tissue from any part of the body and be able to identify the origin and the type of tissue.

At this level, the work typically involves significant personal work contacts with pathologists and other physicians.

Control over the Work

Written and oral instructions do not cover all aspects of the GS-7 histopathology technician's assignment. He must extend and expand known procedures and techniques covering related situations to the assignment at hand. He must interpret, modify, and adapt instructions to apply to new and unusual situations.

The GS-7 histopathology technician typically works under the general direction and supervision of a medical technologist or a pathologist. Because the technician is recognized as having a high level of knowledge and experience and unusual skill in performing the work, the pathologist can accept the histologic preparations and staining reactions with only occasional requests for additional or corrective procedures. Because of the volume of tissues processed in the laboratory, and because the pathologist has great confidence in the technician's competence to produce consistently reliable results, the pathologist seldom checks the validity of the many technical procedures involved in the preparation of tissues for microscopic examination.