CLINICAL AND LABORATORY STANDARDS INSTITUTE®

August 1999

GP23-A

Nongynecologic Cytologic Specimens: Collection and Cytopreparatory Techniques; Approved Guideline

This document provides recommended procedures for the collection, handling, transport, and processing of cytologic specimens from nongynecologic sources.

A guideline for global application developed through the Clinical and Laboratory Standards Institute consensus process.

Clinical and Laboratory Standards Institute

Setting the standard for quality in clinical laboratory testing around the world.

The Clinical and Laboratory Standards Institute (CLSI) is a not-for-profit membership organization that brings together the varied perspectives and expertise of the worldwide laboratory community for the advancement of a common cause: to foster excellence in laboratory medicine by developing and implementing clinical laboratory standards and guidelines that help laboratories fulfill their responsibilities with efficiency, effectiveness, and global applicability.

Consensus Process

Consensus—the substantial agreement by materially affected, competent, and interested parties—is core to the development of all CLSI documents. It does not always connote unanimous agreement, but does mean that the participants in the development of a consensus document have considered and resolved all relevant objections and accept the resulting agreement.

Commenting on Documents

CLSI documents undergo periodic evaluation and modification to keep pace with advancements in technologies, procedures, methods, and protocols affecting the laboratory or health care.

CLSI's consensus process depends on experts who volunteer to serve as contributing authors and/or as participants in the reviewing and commenting process. At the end of each comment period, the committee that developed the document is obligated to review all comments, respond in writing to all substantive comments, and revise the draft document as appropriate.

Comments on published CLSI documents are equally essential, and may be submitted by anyone, at any time, on any document. All comments are addressed according to the consensus process by a committee of experts.

Appeals Process

If it is believed that an objection has not been adequately addressed, the process for appeals is documented in the CLSI Standards Development Policies and Process document.

All comments and responses submitted on draft and published documents are retained on file at CLSI and are available upon request.

Get Involved—Volunteer!

Do you use CLSI documents in your workplace? Do you see room for improvement? Would you like to get involved in the revision process? Or maybe you see a need to develop a new document for an emerging technology? CLSI wants to hear from you. We are always looking for volunteers. By donating your time and talents to improve the standards that affect your own work, you will play an active role in improving public health across the globe.

For further information on committee participation or to submit comments, contact CLSI.

Clinical and Laboratory Standards Institute
950 West Valley Road, Suite 2500
Wayne, PA 19087 USA
P: 610.688.0100
F: 610.688.0700
www.clsi.org
standard@clsi.org

NOTE: This document is no longer being reviewed as part of the CLSI consensus process. However, because of its usefulness to segments of the health care community, it is available for its informational content.

Nongynecologic Cytologic Specimens: Collection and Cytopreparatory Techniques; Approved Guideline

Abstract

Nongynecologic Cytologic Specimens: Collection and Cytopreparatory Techniques; Approved Guideline (CLSI document GP23-A) was developed for use by clinical personnel responsible for the collection and processing of cytologic specimens. This guideline provides recommendations for the collection and handling of specimens from nongynecologic sources for transport to the cytology laboratory. Also included are procedures for processing the specimens (i.e., smear preparation, fixation, and staining) for cytologic evaluations. This document does not address issues related to the interpretation of the slide preparation.

Clinical and Laboratory Standards Institute (CLSI). *Nongynecologic Cytologic Specimens: Collection and Cytopreparatory Techniques; Approved Guideline.* CLSI document GP23-A (ISBN 1-56238-380-9). Clinical and Laboratory Standards Institute, 950 West Valley Road, Suite 2500, Wayne, Pennsylvania 19087 USA, 1999.

GP23-A
ISBN 1-56238-380-9
August 1999 ISSN 0273-3099

Nongynecologic Cytologic Specimens: Collection and Cytopreparatory Techniques; Approved Guideline

Volume 19 Number 14

Kenneth D. McClatchey, M.D., D.D.S.
Nina Dhurandhar, M.D.
Leza Gallo, M.D.
Gary W. Gill, C.T. (ASCP), CFIAC
Daniel F.I. Kurtycz, M.D.
Karen Plowden, C.T.(ASCP)
Gail Radcliffe, Ph.D.
Carol Trew, C.T.(ASCP), M.Ed.

CLINICAL AND LABORATORY STANDARDS INSTITUTE®

Suggested Citation

(NCCLS. *Nongynecologic Cytologic Specimens: Collection and Cytopreparatory Techniques; Approved Guideline.* NCCLS document GP23-A [ISBN 1-56238-380-9]. NCCLS, 940 West Valley Road, Suite 1400, Wayne, Pennsylvania 19087-1898 USA, 1999.)

Proposed Guideline

November 1997

Approved Guideline

August 1999

ISBN 1-56238-380-9
ISSN 0273-3099

Committee Membership

Area Committee on General Laboratory Practices

Donald A. Dynek, M.D. **Chairholder**	**Pathology Medical Services, P.C.** **Lincoln, Nebraska**
Stephen J. Sarewitz, M.D. **Vice Chairholder**	**Valley Medical Center** **Renton, Washington**

Subcommittee on Nongynecologic Specimens

Kenneth D. McClatchey, M.D., D.D.S. **Chairholder**	**Loyola University Medical Center** **Maywood, Illinois**
Nina Dhurandhar, M.D.	Tulane University Medical Center New Orleans, Louisiana
Leza Gallo, M.D.	Quest Diagnostics, Inc. Teterboro, New Jersey
Daniel F.I. Kurtycz, M.D.	University of Wisconsin Madison, Wisconsin
Karen Plowden, C.T.(ASCP)	The Johns Hopkins Hospital Baltimore, Maryland
Gail E. Radcliffe, Ph.D.	Radcliffe Consulting Group Worcester, Massachusetts
Carol Trew, C.T.(ASCP), M.Ed.	St. Joseph Hospital Parkersburg, West Virginia

Advisors

Kim Geisinger, M.D.	North Carolina Baptist Hospital Winston-Salem, North Carolina
Gary W. Gill, C.T.(ASCP), CFIAC	Wilmington, Delaware
Michael R. Henry, M.D., MIAC	National Naval Medical Center Bethesda, Maryland
John A. Maksem, M.D.	Mercy Hospital Medical Center Des Moines, Iowa
Mary Sidaway, M.D.	George Washington Hospital Washington, DC
Mark Suhrland, M.D.	Montefiore Medical Center Bronx, New York
Matt Zarka, M.D.	University of Vermont Burlington, Vermont

Beth Ann Wise, M.T.(ASCP), M.S.Ed.
Staff Liaison
NCCLS
Wayne, Pennsylvania

Patrice E. Polgar
Editor
NCCLS
Wayne, Pennsylvania

Donna M. Wilhelm
Assistant Editor
NCCLS
Wayne, Pennsylvania

ACTIVE MEMBERSHIP (as of 1 July 1999)

Sustaining Members

Abbott Laboratories
American Association for Clinical Chemistry
Bayer Corporation
Beckman Coulter, Inc.
Becton Dickinson and Company
bioMérieux, Inc.
College of American Pathologists
Dade Behring Inc.
Nippon Becton Dickinson Co, Ltd.
Ortho-Clinical Diagnostics, Inc.
Pfizer Inc
Roche Diagnostics, Inc.

Professional Members

American Academy of Family Physicians
American Association of Bioanalysts
American Association of Blood Banks
American Association for Clinical Chemistry
American Association for Respiratory Care
American Chemical Society
American Medical Technologists
American Public Health Association
American Society for Clinical Laboratory Science
American Society of Hematology
American Society for Microbiology
American Society of Parasitologists, Inc.
American Type Culture Collection, Inc.
Asociación Española Primera de Socorros (Uruguay)
Asociacion Mexicana de Bioquimica Clinica A.C.
Assn. of Public Health Laboratories
Assoc. Micro. Clinici Italiani-A.M.C.L.I.
Australasian Association of Clinical Biochemists
British Society for Antimicrobial Chemotherapy
Canadian Society for Medical Laboratory Science—Société Canadienne de Science de Laboratoire Médical
Canadian Society of Clinical Chemists
Clinical Laboratory Management Association
College of American Pathologists
College of Medical Laboratory Technologists of Ontario
College of Physicians and Surgeons of Saskatchewan
Commission on Office Laboratory Accreditation
Danish Society of Clinical Chemistry
Fundacion Bioquimica de la Provincia (Argentina)
International Association of Medical Laboratory Technologists
International Council for Standardization in Haematology
International Federation of Clinical Chemistry
International Society for Analytical Cytology
Italian Society of Clinical Biochemistry
Japan Society of Clinical Chemistry
Japanese Committee for Clinical Laboratory Standards
Joint Commission on Accreditation of Healthcare Organizations
National Academy of Clinical Biochemistry
National Society for Histotechnology, Inc.
Ontario Medical Association Laboratory Proficiency Testing Program
Ordre professionnel des technologistes médicaux du Québec
RCPA Quality Assurance Programs PTY Limited
Sociedade Brasileira de Analises Clinicas
Sociedade Brasileira de Patologia Clinica
Sociedad Espanola de Quimica Clinica
VKCN (The Netherlands)

Government Members

Armed Forces Institute of Pathology
Association of Public Health Laboratory Directors
BC Centre for Disease Control
Centers for Disease Control and Prevention
Chinese Committee for Clinical Laboratory Standards
Commonwealth of Pennsylvania Bureau of Laboratories
Department of Veterans Affairs
Deutsches Institut für Normung (DIN)
FDA Center for Devices and Radiological Health
FDA Division of Anti-Infective Drug Products
Health Care Financing Administration
Iowa State Hygienic Laboratory
Massachusetts Department of Public Health Laboratories
Michigan Department of Public Health
National Association of Testing Authorities - Australia
National Center of Infectious and Parasitic Diseases (Bulgaria)
National Institute of Standards and Technology
Ohio Department of Health
Oklahoma State Department of Health
Ontario Ministry of Health
Saskatchewan Health-Provincial Laboratory
South African Institute for Medical Research
Swedish Institute for Infectious Disease Control

Industry Members

AB Biodisk
Abbott Laboratories
AccuMed International, Inc.
Accumetrics, Inc.
Amersham Pharmacia Biotech
Ammirati Regulatory Consulting
Asséssor
AstraZeneca
Avocet Medical, Inc.
Bayer Corporation - Elkhart, IN

Bayer Corporation - Middletown, VA
Bayer Corporation - Tarrytown, NY
Bayer Corporation - West Haven, CT
Bayer Medical Ltd.
Beckman Coulter, Inc.
Beckman Coulter, Inc. Primary Care Diagnostics
Beckman Coulter K.K. (Japan)
Becton Dickinson and Company
Becton Dickinson Biosciences
Becton Dickinson Consumer Products
Becton Dickinson Immunocytometry Systems
Becton Dickinson Italia S.P.A.
Becton Dickinson VACUTAINER Systems
bioMérieux, Inc.
Biometrology Consultants
Bio-Rad Laboratories, Inc.
Biotest AG
Bristol-Myers Squibb Company
Canadian Reference Laboratory Ltd.
CASCO•NERL Diagnostics
Checkpoint Development Inc.
Chiron Diagnostics Corporation - International Operations
Chiron Diagnostics Corporation - Reagent Systems
Clinical Lab Engineering
COBE Laboratories, Inc.
Combact Diagnostic Systems Ltd.
Community Medical Center (NJ)
Control Lab (Brazil)
Cosmetic Ingredient Review
Cubist Pharmaceuticals
Cytometrics, Inc.
Dade Behring Inc. - Deerfield, IL
Dade Behring Inc. - Glasgow, DE
Dade Behring Inc. - Marburg, Germany
Dade Behring Inc. - Miami, FL
Dade Behring Inc. - Sacramento, CA
Dade Behring Inc. - San Jose, CA
DAKO A/S
Diagnostic Products Corporation
DiaSorin
Eiken Chemical Company, Ltd.
Enterprise Analysis Corporation
Fort Dodge Animal Health
Gen-Probe
Glaxo-Wellcome, Inc.
Greiner Meditech, Inc.
Health Systems Concepts, Inc.
Helena Laboratories
Hycor Biomedical Inc.
I-STAT Corporation
Instrumentation Laboratory
Integ, Inc.
International Technidyne Corporation
Johnson City Medical Center
Kendall Sherwood-Davis & Geck
Labtest Diagnostica S.A.
LifeScan, Inc. (a Johnson & Johnson Company)
LifeSign, LLC
Lilly Research Laboratories
Medical Device Consultants, Inc.
Medical Laboratory Automation Inc.
MediSense Products (Div. Of Abbott Laboratories)
Medtronic Perfusion Systems
Merck & Company, Inc.
Nabi
Neometrics Inc.
Nichols Institute Diagnostics (Div. of Quest Diagnostics, Inc.)
Nissui Pharmaceutical Co., Ltd.
Nippon Becton Dickinson Co., Ltd.
Norfolk Associates, Inc.
OBC Associates
Olympus Corporation
Optical Sensors, Inc.
Organon Teknika Corporation
Ortho-Clinical Diagnostics, Inc. (England)
Ortho-Clinical Diagnostics, Inc. (Raritan, NJ)
Ortho-Clinical Diagnostics, Inc. (Rochester, NY)
Oxoid Inc.
Oxoid LTD (U.K.)
Pfizer Inc
Pharmacia & Upjohn
Procter & Gamble Pharmaceuticals, Inc.
The Product Development Group
Quintiles, Inc.
Radiometer America, Inc.
Radiometer Medical A/S
David G. Rhoads Associates, Inc.
Rhône-Poulenc Rorer
Roche Diagnostics GmbH
Roche Diagnostics, Inc.
Roche Diagnostic Systems (Div. Hoffmann-La Roche Inc.)
Roche Laboratories (Div. Hoffmann-La Roche Inc.)
The R.W. Johnson Pharmaceutical Research Institute
Sanofi Diagnostics Pasteur
Sarstedt, Inc.
SARL Laboratoire Carron (France)
Schering Corporation
Schleicher & Schuell, Inc.
Second Opinion
SenDx Medical, Inc.
Showa Yakuhin Kako Company, Ltd.
SmithKline Beecham Corporation
SmithKline Beecham, S.A.
Streck Laboratories, Inc.
Sysmex Corporation (Japan)
Sysmex Corporation (Long Grove, IL)
The Toledo Hospital (OH)
Vetoquinol S.A.
Vysis, Inc.
Wallac Oy
Warner-Lambert Company
Wyeth-Ayerst
Xyletech Systems, Inc.
YD Consultant

Trade Associations

Association of Medical Diagnostic Manufacturers
Health Industry Manufacturers Association
Japan Association Clinical Reagents Ind. (Tokyo, Japan)
Medical Industry Association of Australia

Associate Active Members

20th Medical Group (Shaw AFB, SC)
67th CSH Wuerzburg, GE (NY)
121st General Hospital (CA)
Acadiana Medical Laboratories, LTD (LA)
Advocate Laboratories (IL)
The Aga Khan University Medical Center (Pakistan)
Allegheny General Hospital (PA)
Allegheny University of the Health Sciences (PA)
Allina Laboratories (MN)
Alton Ochsner Medical Foundation (LA)
Anzac House (Australia)

Associated Regional & University Pathologists (UT)
Aurora Consolidated Laboratories (WI)
Baptist St. Anthony's Health Network (TX)
Baystate Medical Center (MA)
Brazileiro De Promocao (Brazil)
Bristol Regional Medical Center (TN)
Brookdale Hospital Medical Center (NY)
Brooke Army Medical Center (TX)
Brooks Air Force Base (TX)
Broward General Medical Center (FL)
Calgary Laboratory Services (Calgary, AB, Canada)
Cardinal Glennon Children's Hospital (MO)
Central Kansas Medical Center
Champlain Valley Physicians Hospital (NY)
Children's Hospital (LA)
Children's Hospital Medical Center (Akron, OH)
Clendo Lab (Puerto Rico)
CLSI Laboratories (PA)
Colorado Mental Health Institute at Pueblo
Columbia Tulsa Regional Medical Center (OK)
Commonwealth of Kentucky
CompuNet Clinical Laboratories (OH)
Consolidated Laboratory Services (CA)
Danville Regional Medical Center (VA)
Dean Medical Center (WI)
Detroit Health Department (MI)
Duke University Medical Center (NC)
Durham Regional Hospital (NC)
Duzen Laboratories (Turkey)
Dynacare Laboratories - Eastern Region (Ottawa, ON, Canada)
E.A. Conway Medical Center (LA)
East Texas Medical Center
Elmhurst Memorial Hospital (IL)
Emory University Hospital (GA)
Fairfax Hospital (VA)
Fairview-University Medical Center (MN)
Foothills Hospital (Calgary, AB, Canada)
Fox Chase Cancer Center (PA)
Fresenius Medical Care/Life Chem (NJ)
Fresno Community Hospital and Medical Center
GDS Technology, Inc (IN)
Grady Memorial Hospital (GA)
Greater Southeast Community Hospital (DC)
Guthrie Clinic Laboratories (PA)
Halifax Medical Center (FL)
Harris Methodist Fort Worth (TX)
Harris Methodist Northwest (TX)
Hartford Hospital (CT)
Hays Pathology Laboratories, P.A. (KS)
Headwaters Health Authority (High River, AB, Canada)
Health Alliance Laboratory (OH)
Health Network Lab (PA)
Health Sciences Centre (Winnipeg, MB, Canada)
Heartland Health System (MO)
Hinsdale Hospital ((L)
Hoag Memorial Hospital Presbyterian (CA)
Holmes Regional Medical Center (FL)
Holy Spirit Hospital (PA)
Holzer Medical Center (OH)
Hospital for Sick Children (Toronto, ON, Canada)
Huddinge University Hospital (Sweden)
Hunter Area Pathology Service (Australia)
Hurley Medical Center (MI)
Instituto Scientifico HS. Raffaele (Italy)
International Health Management Associates, Inc. (IL)
Intermountain Health Care Laboratory Services (UT)
Jacobi Medical Center (NY)
John Randolph Hospital (VA)
Johns Hopkins Medical Institutions (MD)
Johnson City Medical Center (IN)
Kaiser Permanente (CA)
Kenora-Rainy River Regional Laboratory Program (Dryden, Ontario, Canada)
Klinicni Center (Slovenia)
LabCorp (NC)
Laboratoire de Santé Publique du Quebec (Canada)
Laboratório Fleury S/C Ltda. (Brazil)
Lancaster General Hospital (PA)
Langley Air Force Base (VA)
Lewis-Gale Medical Center (VA)
Libero Instituto Univ. Campus BioMedico (Italy)
Loma Linda University Medical Center (CA)
Los Angeles County and USC Medical Center (CA)
Louisiana State University Medical Center
Lutheran Hospital (WI)
Main Line Clinical Laboratories, Inc. (PA)
Massachusetts General Hospital
MDS Metro Laboratory Services (Burnaby, BC, Canada)
MDS-Sciex (Concord, ON, Canada)
Medical College of Virginia Hospital
Melrose-Wakefield Hospital (MA)
Memorial Medical Center (LA)
Memorial Medical Center (IL)
Mercy Health System (PA)
Mercy Hospital (NC)
Methodist Hospital (TX)
Methodist Hospital Indiana
Methodist Hospitals of Memphis (TN)
Mid Michigan Medical Center - Midland
Milton S. Hershey Medical Center (PA)
Mississippi Baptist Medical Center
Monte Tabor-Centro Italo-Brazileiro De Promocao (Brazil)
Montreal Children's Hospital (Canada)
Mount Sinai Hospital (NY)
National University Hospital (Singapore)
Naval Surface Warfare Center (IN)
Nebraska Health System
New Britain General Hospital (CT)
New England Medical Center Hospital (MA)
The New York Blood Center
The New York Hospital Medical Center of Queens
New York State Department of Health
NorDx (ME)
North Carolina Laboratory of Public Health
North Coast Clinical Laboratory, Inc. (OH)
Northridge Hospital Medical Center (CA)

North Shore University Hospital (NY)
Northwestern Memorial Hospital (IL)
Ohio State University Hospitals
Olin E. Teague Medical Center (TX)
Our Lady of Lourdes Hospital (NJ)
Our Lady of the Resurrection Medical Center (IL)
Pathology and Cytology Laboratories, Inc. (KY)
Permanente Medical Group (CA)
Presbyterian Hospital of Dallas (TX)
Providence Health System (OR)
Providence Medical Center (WA)
Queen Elizabeth Hospital (Prince Edward Island, Canada)
Queensland Health Pathology Services (Australia)
Quintiles Laboratories, Ltd. (GA)
Regions Hospital
Research Medical Center (MO)
Riyadh Armed Forces Hospital (Saudi Arabia)
Robert F. Kennedy Medical Center (CA)
Saint Mary's Regional Medical Center (NV)
Santa Clara Valley Medical Center (CA)
St. Alexius Medical Center (ND)
St. Anthony Hospital (CO)
St. Boniface General Hospital (Winnipeg, Canada)
St. Francis Medical Center (CA)
St. John Hospital and Medical Center (MI)
St. John Regional Hospital (St. John, NB, Canada)
St. Joseph Hospital (NE)
St. Joseph's Hospital - Marshfield Clinic (WI)
St. Luke's Hospital (PA)
St. Luke's Regional Medical Center (IA)
St. Luke's-Roosevelt Hospital Center (NY)
St. Mary Hospital (NJ)
St. Mary Medical Center (CA)
St. Mary Medical Center (IN)
St. Mary of the Plains Hospital (TX)
SARL Laboratoire Carron (France)
San Francisco General Hospital (CA)
Seoul Nat'l University Hospital (Korea)
Shanghai Center for the Clinical Laboratory (China)
Shands Healthcare (FL)
SmithKline Beecham Clinical Laboratories (GA)
SmithKline Beecham Clinical Laboratories (WA)
South Bend Medical Foundation (IN)
Southern California Permanente Medical Group
South Western Area Pathology Service (Australia)
Speciality Laboratories, Inc. (CA)
Stanford Health Services (CA)
Stormont-Vail Regional Medical Center (KS)
Sun Health-Boswell Hospital (AZ)
Sunrise Hospital and Medical Center (NV)
Sutter Health (CA)
Timmins & District Hospital (Timmons, ON, Canada)
Tri-City Medical Center (CA)
Tripler Army Medical Center (HI)
Trumbull Memorial Hospital (OH)
Tulane Medical Center Hospital & Clinic (LA)
Twin Lake Regional Medical Center
UCSF Medical Center (CA)
UNC Hospitals (NC)
Unilab Clinical Laboratories (CA)
University of Alabama - Birmingham Hospital
University of Alberta Hospitals (Canada)
University of Chicago Hospitals (IL)
University Hospital (IN)
University Hospital (Gent) (Belgium)
University Hospital (London, Ontario, Canada)
University Hospital of Cleveland (OH)
The University Hospitals (OK)
University of Medicine & Dentistry, NJ University Hospital
University of Michigan
University of the Ryukyus (Japan)
University of Texas Medical School at Houston
University of Virginia Medical Center
University of Washington
UPMC Bedford Memorial (PA)
USAF Medical Center (OH)
UZ-KUL Medical Center (Belgium)
VA (Dayton) Medical Center (OH)
VA (Denver) Medical Center (CO)
VA (Kansas City) Medical Center (MO)
VA Outpatient Clinic (OH)
VA (San Diego) Medical Center (CA)
VA (Tuskegee) Medical Center (AL)
Vejle Hospital (Denmark)
Viridae Clinical Sciences, Inc. (Vancouver, BC, Canada)
ViroLogic, Inc. (CA)
Waikato Hospital (New Zealand)
Walter Reed Army Institute of Research (MD)
Warde Medical Laboratory (MI)
Warren Hospital (NJ)
Washoe Medical Center (NV)
Watson Clinic (FL)
Williamsburg Community Hospital (VA)
Wilford Hall Medical Center (TX)
Wilson Memorial Hospital (NY)
Winchester Hospital (MA)
Winn Army Community Hospital (GA)
Wishard Memorial Hospital (IN)
Yonsei University College of Medicine (Korea)
York Hospital (PA)
Zale Lipshy University Hospital (TX)

Contents

Foreword

Modern cytopathologic techniques, when carried out by a healthcare practitioner on a cooperative patient and followed by "quality controlled" laboratory techniques, can produce results with high diagnostic accuracy. Adequate patient preparation and education are required.

The emphasis on cytopathologic techniques of nongynecologic specimens is on effectiveness and quality. This guideline is directed specifically at specimen collection and processing. If the predictive value of a nongynecologic cytology specimen can be increased, a major achievement in medical care and cost effectiveness will have been accomplished.

This "user" guideline is the beginning of a process of improvement in the nongynecologic smear production chain. The intent is to provide guidance for this process up to and including the preparation of the nongynecologic cytologic specimen, in order to provide a specimen suitable for accurate diagnosis.

Standard Precautions

Because it is often impossible to know what might be infectious, all human blood specimens are to be treated as infectious and handled according to "standard precautions." Standard precautions are new guidelines that combine the major features of "universal precautions and body substance isolation" practices. Standard precautions cover the transmission of any pathogen and thus are more comprehensive than universal precautions which are intended to apply only to transmission of blood-borne pathogens. Standard precaution and universal precaution guidelines are available from the U.S. Centers for Disease Control and Prevention (Guideline for Isolation Precautions in Hospitals, Infection Control and Hospital Epidemiology, CDC, Vol 17;1:53-80.), [MMWR 1987;36(suppl 2S):2S-18S] and (MMWR 1988;37:377-382, 387-388). For specific precautions for preventing the laboratory transmission of blood-borne infection from laboratory instruments and materials; and recommendations for the management of blood-borne exposure, refer to NCCLS document M29—*Protection of Laboratory Workers from Instrument Biohazards and Infectious Disease Transmitted by Blood, Body Fluids, and Tissue*.

Key Words

Cytologic specimen collection, nongynecologic cytology

Nongynecologic Cytologic Specimens: Collection and Cytopreparatory Techniques; Approved Guideline

1 Introduction

The primary purpose of cytologic examination of body fluid samples is to detect malignancy, but the method is also appropriate for the detection of inflammatory or infectious disorders. Reliable cytodiagnosis of body fluids depends on sufficient patient history and excellent technical slide preparations — at the very least. To that end, this document provides guidance for a number of clinical and laboratory procedures for the collection and processing of body fluid specimens. Followed skillfully and properly, these techniques will provide an indispensable foundation for high diagnostic accuracy.

While using the following guideline, the laboratorian and clinician are cautioned to remember that the diagnostic technique is being done for the patient. Most people preparing for a physical examination of any type experience anxiety over the possibility of an abnormal finding. Since body fluid procurement often involves some sort of invasive maneuver, the situation can be even more distressing. There are many ways to decrease the anxiety surrounding the procedure. A comfortable setting with pleasing surroundings helps to allay fear. Courteous, well-trained personnel and an efficient system for handling patients also help to decrease apprehension. A thoughtful, concerned healthcare provider who takes time to explain the procedure, answers questions, and interacts with the patient in a professional manner can do a lot to decrease the anxiety of a patient about to undergo a procedure for the sake of obtaining a cellular sample.

Cytologic samples are collected and prepared by a variety of methods, all of which have an effect on cytomorphology. The goals of standardizing specimen collection and processing are to minimize unwanted artifacts; and to obtain, well distributed, well-preserved, and well-stained cells that can be sharply imaged lending themselves to accurate diagnoses.

2 Scope

This document provides relevant information about various aspects of the performance of nongynecologic cytologic specimen preparation in order to evaluate and assess disease processes. It considers both immediate processing and complex handling. It is recognized that new developments in the art may augment or supplant the suggestions provided herein.

3 Preparation of the Patient, Collection and Handling of the Specimen [1,2]

The life cycle of the nongynecologic cytology specimen begins with the test request and ends when a cytologic diagnosis is reported to the ordering physician and documented (see Figure 1).

For optimal cytologic preparations, patients should be adequately prepared and the specimens should be properly collected. The methods for patient preparations will vary according to the sampling site. The following sections address common specimens requiring patient preparation. Standard aseptic technique should be followed. Copies of procedural protocols should be present wherever the procedures are performed as well as at the cytology laboratory.

In the practice of nongynecologic cytology, samples are derived from:

- cerebrospinal tract
- gastrointestinal tract
- joint spaces
- ocular area
- pericardium
- peritoneum
- pleura
- respiratory tract
- skin and mucosal samples
- urinary tract
- breast/nipple
- breast secretions.