COLLEGE of AMERICAN PATHOLOGISTS

Laboratory Quality Solutions

2019 Surveys and Anatomic Pathology Education Programs

PERFORMANCE YOU CAN MEASURE.
ACCURACY YOU CAN TRUST.

The science of better PT.

Proficiency Testing (PT) offerings from the CAP are supported by 600 experts in laboratory medicine serving on 32 scientific committees. These experts track testing trends, monitor technical advances, and work collaboratively with professional colleagues and medical specialty societies to improve the quality of testing.

Through their efforts, PT programs from the CAP are based on the latest scientific information and reflect the current needs of laboratory medicine. This expertise not only drives improvements in the laboratory, it helps propel advancements in the in vitro diagnostics industry.

CAP science in action: Improving Hemoglobin A_{1c} PT

The CAP has worked with the National Glycohemoglobin Standardization Program (NGSP) in tightening of the accuracy-based grading by using NGSP targets for the CAP Hemoglobin A_{1c} PT. When the accuracy-based grading started in 2007, 15% was the initial acceptable limit. In 2019, we use 6%. In response to the tightened grading, the manufacturers have improved their assays and PT results are now more reflective of the patient results. This was made possible by using fresh whole blood specimens in the Hemoglobin A_{1c} program (GH5).

This improvement in hemoglobin A_{1c} assays contributes to better patient care and the use of A_{1c} as a means of diagnosing and monitoring diabetes.

Only the CAP makes such an extensive use of scientific committees and experts. When you rely on CAP PT, you're assured that everything offered is based on the latest scientific advances, and an unrelenting drive for excellence.

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Insight at a glance.

In just seconds, the CAP's Performance Analytics Dashboard provides valuable insights into your laboratory's performance, letting you proactively focus energy on areas that need immediate attention while filtering out distractions. Updated daily, this complimentary Surveys and CAP accreditation performance monitoring tool reduces the stress of managing today's laboratory by giving you fast access to a single laboratory's or an expansive network's performance.

To view a demo, search Performance Analytics Dashboard at cap.org.

1 New Developments

Simplify your life with the CAP online store.

Now you can order proficiency testing and quality improvement programs, learning opportunities, publications, and more right from your computer.

- Review your 2019 prepopulated quote.
- Add new programs based on your test menu.
- Manage your shipping and billing information.

To get started, visit cap.org and click on the SHOP tab.

New Developments

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2 Continuing Education

Maintain your certification with continuing education (CE) from CAP Surveys.

- Offer your staff more than 100 CE credits.
- Enhance your learning with content that is tightly integrated with proficiency testing challenges.
- Meet certification and licensure requirements with CE across multiple disciplines.

Continuing Education

Continuing Education Programs

Your laboratory demonstrates its commitment to quality by choosing CAP Surveys programs. You'll find the same level of quality in the CAP Continuing Education Programs.

CME (Continuing Medical Education for Physicians)

Accreditation

The College of American Pathologists (CAP) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

CME Category 1

The CAP designates these enduring materials educational activities for a maximum of the stated number of *AMA PRA Category 1 Credits*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Note to CME participants of enduring* materials courses:

An AMA requirement mandates that all physicians wishing to claim CME credits must pass a scored assessment. All CAP enduring materials CME courses require participants to pass a scored assessment prior to claiming credit.

*Enduring courses are those courses that endure over time, such as print or online courses.

CE (Continuing Education for Nonphysicians)

The CAP designates these educational activities for a maximum of the stated number of credits of continuing education. Participants should claim only the credit commensurate with the extent of their participation in the activity.

The American Society for Clinical Pathology (ASCP) Board of Certification (BOC) Certification Maintenance Program (CMP) accepts these activities to meet its continuing education requirements. The states of California and Florida also approve these activities for continuing education credit.

Cytotechnologists may apply the credits from the PAP Education (PAPCE/PAPJE/PAPKE/PAPLE/PAPME), NGC, FNAG, FNA, and TICP programs toward the required educational activities for the American Society of Cytopathology (ASC) Continuing Education Credit Program (CECC) and the International Academy of Cytology (IAC).

This activity is eligible for continuing medical education (CME) credit or continuing education (CE) credit.

Surveys Continuing Education Activities

When your laboratory participates in CAP Surveys, every member of your team can enroll in education activities and earn continuing education (CE) credit at no additional charge. Simply follow these steps:

1. Establish a free Web account.
2. Complete a reading provided in the Participant Summary or Final Critique.
3. Answer online learning assessment questions.
4. Claim CE certificate.

Each member of your staff can access the Surveys education activities for a maximum of 12 months.

Surveys Educational Activities

Program Name	Program Code	Discipline	Catalog Page(s)
General Chemistry and Therapeutic Drugs	C1, C3/C3X, C4, C7, CZ/CZX/CZ2X, Z	Chemistry	56-58
Quality Cross Check—Whole Blood Glucose	WBGQ	Chemistry	41
Endocrinology	Y, YY, DY, BGS, BU, EPO, ING, RAP	Chemistry	84-86, 89
Coagulation, Limited	CGB, CGL, CGDF	Coagulation	160
Cytogenetics	CY, CYBK	Cytogenetics	240
Basic Hematology	HE, HEP	Hematology and Clinical Microscopy	136
Blood Cell Identification	BCP, BCP2	Hematology and Clinical Microscopy	140
Hematology Automated Differentials FH Series	FH1-FH4, FH6, FH9-10, FH13-14	Hematology and Clinical Microscopy	136-137
Virtual Body Fluid	VBF	Hematology and Clinical Microscopy	148
Bone Marrow Cell Differential	BMD	Hematology and Clinical Microscopy	140
Clinical Microscopy	CMP, CMP1, GOCB, OCB, DSC	Hematology and Clinical Microscopy	146, 149-151
CAP/NSH HistoQIP	HQIP	Histology	268
Immunology	IG, IGX, ANA, ASO, CRP, HCG, IM, RF, RUB, IL, M, OLI, G, LPE, SPE, UBJP, RDS, CCP, S2, S4, S5	Immunology	74,76, 206-207, 210-211
Bacteriology	D	Microbiology	173
Mycology and Aerobic Actinomycetes	F	Microbiology	189
Limited Bacteriology	D1, D2, D3, D4, D5, D6, D7, MC1, MC2, MC3, MC4, MC5	Microbiology	175-178
Sperm Count, Motility, Morphology, and Viability	SMCD, SM1CD, SM2CD	Reproductive Medicine	156
Semen Analysis	SC, SC1, PV, SM, SV, ASA	Reproductive Medicine	156
Embryology	EMB	Reproductive Medicine	157
Transfusion Medicine	J, J1, JE1, JAT, JATE1, EXM, EXM2	Transfusion Medicine	218-220

Surveys Self-Reported Training Opportunities

When your laboratory participates in CAP Surveys, *every member of your team* can receive self-reported training opportunities.

Self-Reported Training Opportunities*

Program Name	Program Code	Source	Catalog Page(s)
Quality Management Tools			
QP191 - Technical Staffing Ratios NEW	QP191	Final Critique	25
QP192 - Opioid Drug Testing Stewardship NEW	QP192	Final Critique	26
QP193 - Expression Rates in Invasive Breast Carcinoma NEW	QP193	Final Critique	27
QP194 - The Impact of Pathologist Review on Peripheral Blood Smears NEW	QP194	Final Critique	28
Hematology and Clinical Microscopy			
Blood Cell Identification	BCP, BCP2	Participant Summary	140
Bone Marrow Cell Differential	BMD	Participant Summary	140
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Hematology Automated Differentials FH Series	FH1–FH13, FH1P–FH13P	Participant Summary	136
Basic Hematology	HE, HEP	Participant Summary	136
Hemoglobinopathy	HG	Participant Summary	141
Virtual Body Fluid	VBF	Participant Summary	148
Virtual Peripheral Blood Smear	VPBS	Participant Summary	144
Clinical Microscopy	CMP, CMMP, CMP1	Participant Summary	146-147
Microbiology			
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Expanded Bacteriology	DEX	Participant Summary/Final Critique	174
Mycobacteriology	E	Participant Summary/Final Critique	188
Yeast	F1	Participant Summary/Final Critique	189
Parasitology	P	Participant Summary/Final Critique	192
Ticks, Mites, and Other Arthropods	TMO	Participant Summary	193
Worm Identification	WID	Participant Summary	194

*Notes:

- CAP Self-Reported Training Opportunities do not offer CE credit, but can be used toward fulfilling requirements for certification maintenance by agencies such as the American Society for Clinical Pathology (ASCP). Please verify with your certifying agency to determine your education requirements.
- These opportunities are subject to change. Refer to the Participant Summary/Final Critique for availability.

Continuing Certification (CC)

Continuing Certification (CC), formerly known as Maintenance of Certification (MOC) is the board certification program that involves continuous professional development and ensures that an American Board of Pathology (ABP) board-certified pathologist is committed to lifelong learning and competency in a specialty and/or subspecialty.

There are six competency categories defined by the American Board of Medical Specialties (ABMS) and endorsed by the ABP to fulfill specific CC requirements. They are listed below with their descriptions.

All CAP education activities providing CME credits meet the CC Part II: Lifelong Learning requirements. Some programs will meet the requirements for Self-Assessment Module (SAM) and/or CC Part IV at the laboratory or the individual levels. Programs that meet Part IV are identified within the description of the program. Visit the CAP website for the current list of programs that meet the requirements for CC Part II and Part IV.

Interpersonal and Communication Skills
Demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, patients' families, and professional associates.

Medical Knowledge
Demonstrate knowledge of established and evolving biomedical, clinical, and cognate sciences and the application of this knowledge to pathology.

Practice-Based Learning and Improvement
Demonstrate ability to investigate and evaluate diagnostic and laboratory practices in your own laboratory, appraise and assimilate scientific evidence, and improve laboratory practices and patient care.

Patient Care
Demonstrate a satisfactory level of diagnostic competence and provide appropriate and effective consultation in the context of pathology services.

Professionalism
Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to diverse patient population.

Systems-Based Practice
Demonstrate understanding of and contribution to local, regional, and national health care systems, and support health care in systems-based practice definition.

Self Assessment Module: This activity fulfills the SAM credit requirements for CC and is therefore eligible for SAM credit. Participants who successfully complete an online assessment may apply their earned credit(s) to the ABP's SAM requirements.

Note to CME/CE participants: **The AMA mandates that all education providers (such as the CAP) require participants pass assessment questions in an enduring* program in order to earn and claim CME credits. All participants in any activity granting CME/CE will be required to complete and pass assessment questions before claiming their credits.**

For CME/SAM activities ONLY: Participants have a total of three opportunities to take and pass the post-test, with feedback provided after each question. The AMA requires that participants pass the post-test in an enduring program to claim credit; therefore, if they do not pass, they cannot claim credit.

**Enduring programs are those courses that endure over time such as print or online courses.*

Education Programs

Program Name	Program Code	Maximum *AMA PRA CME Category 1 Credits™* Annually	Maximum CE Credits Annually	Format	Catalog Page
Autopsy Pathology	AUP/AUP1	12.5****	NA	Online	275
Clinical Pathology Improvement Program*	CPIP/CPIP1	15****	NA	Online	14
Digital Slide Program in Dermatopathology*	DPATH/DPATH1	15****	NA	Online (DigitalScope®)	265
Digital Slide Program in FNA*	FNA/FNA1	10	10	Online (DigitalScope)	282
Fine-Needle Aspiration Glass Slides	FNAG/FNAG1	10	10	Glass Slides	283
Forensic Pathology	FR/FR1	12.5****	12.5	Online	286
Digital Slide Program in Hematopathology	HPATH/HPATH1	12.5****	12	Online (DigitalScope)	145
Nongynecologic Cytopathology Education**	NGC/NGC1	25	25	Glass Slides With Online Cases (DigitalScope)	281
Neuropathology Program	NP/NP1	10****	NA	Online (DigitalScope)	276
Gynecologic Cytopathology PAP Education Program***	PAPCE/APAPCE PAPJE/APAPJE PAPKE/APAPKE PAPLE/APAPLE PAPME/APAPME Series 1 or 2	8	8	Glass Slides	278
Glass Slide Cytopathology PAP PT Program (with Glass Slide PAP Education)***	PAPCPT/APAPCPT PAPJPT/APAPJPT PAPKPT/APAPKPT PAPLPT/APAPLPT PAPMPT/APAPMPT	8	8	Glass Slides	277

*Program is available for purchase online. Go to cap.org and choose the Learning tab.

**NGC provides up to 20 CME/CE credits for the glass slides and 5 CME/CE credits for the online slide portion of the program.

***PAP provides up to 8 CME/CE credits for glass slides.

****SAM credits are included in CME totals for the appropriate programs.

Education Programs					
Program Name	**Program Code**	**Maximum *AMA PRA CME Category 1 Credits™* Annually**	**Maximum CE Credits Annually**	**Format**	**Catalog Page**
Performance Improvement Program in Surgical Pathology	PIP/PIP1	40	NA	Glass Slides	263
Online Performance Improvement Program in Surgical Pathology*	PIPW/PIPW1	40	NA	Online (DigitalScope)	262
Nongynecologic Cytopathology Intraoperative Touch Imprint/ Crush Preparation Program*	TICP/TICP1	10****	10	Online (DigitalScope)	267
Variant Interpretation Only Program	VIP/VIP1	3	3	Online	250
Virtual Biopsy Program*	VBP/VBP1	25****	NA	Online (DigitalScope)	264

*Program is available for purchase online. Go to cap.org and choose the Learning tab.

****SAM credits are included in CME totals for the appropriate programs.

System Requirements

DigitalScope is a Web-based whole slide image (WSI) retrieval and viewing system. DigitalScope is supported with Microsoft Internet Explorer 11.0 (limited support for IE 9 and 10) or later, Firefox 4.0 or later, Safari 3, and the latest Google Chrome version.

For the most up-to-date information on system requirements, go to cap.org and select CONTACT & SUPPORT. The download speed and the appearance of the activity will vary depending on the type and speed of your Internet connection, computer's power, and browser.

Clinical Pathology Improvement Program (CPIP)

The Clinical Pathology Improvement Program (CPIP) delivers 12 online clinical laboratory cases to study—one per month—and an opportunity to earn up to 15 CME/SAM credits annually. Assess and improve clinical pathology skills and fulfill Continuing Certification (CC) requirements, formerly known as Maintenance of Certification (MOC).

CPIP cases feature real-life case scenarios, including images and clinical background. Participants work through sequentially revealed information and a series of prompts to arrive at a resolution—just as in the laboratory.

Cases include thought-provoking questions with feedback and a multiple-choice post-test. Participants who earn passing scores on post-tests may apply their earned credits to the ABP's CC SAM requirements.

Clinical Pathology Improvement Program CPIP/CPIP1

Program Name	Program Code	Cases/Year
	CPIP/CPIP1	
Online cases in clinical pathology	▮	12

Additional Information

Pathologists and residents can use CPIP online to assess and improve their skills in clinical pathology.

- Case topics may originate from the ABP's general listing suggested for CC including laboratory administration and operations, transfusion medicine, chemistry, coagulation, hematology, immunology, microbiology, and molecular genetic pathology.
- Cases may include patient history, case-related static images, and whole slide images.
- Monthly individual CPIP cases can also be ordered online. Go to cap.org and choose the Learning tab. To order both CPIP and CPIP1, please call 800-323-4040 or 847-832-7000 option 1.

Program Information

- CPIP - One online clinical laboratory case per month
- CPIP1 - Additional pathologist (within the same institution) reporting option with CME/SAM credit; must order in conjunction with CPIP
- Earn a maximum of 15 CME/SAM credits *(AMA PRA Category 1 Credits™)* per year
- This activity meets the ABP CC Part IV Practice Performance Assessment requirements
- Twelve cases per year; your CAP shipping contact will be notified via email when the activity is available

Competency Assessment Program

About one of every four laboratories is cited for a deficiency related to its competency assessment records. You can avoid becoming a part of this statistic.

Competency Assessment Program

The CAP's Competency Assessment Program helps keep you in compliance by managing your personnel's competency assessment performance and records. Use the CAP's Competency Assessment Program to track compliance to all six of the elements of competency assessment as defined by CLIA. Customizable to fit your specific laboratory's procedures, Competency Assessment Program offers benefits that simplify your documentation process.

- **Be organized.** Stay on top of your documentation and records with easy-to-use management reports, employee progress tracking, and individual employee transcripts so your laboratory is inspection-ready at all times.
- **Obtain real-time results.** Generate management reports with just a few clicks.
- **Strengthen your learning.** The program comes ready with multiple relevant, applicable courses already loaded, and new courses are added every six months. Plus, if employees need a refresher learning opportunity, reassessment courses are included.
- **Customize training to your needs.** If the wide selection of ready-made training courses (Pro Courses) doesn't meet your needs, customize them. You can match courses to your laboratory's exact standard procedures.
- **Save time.** Tools like ChecklistBuilder, CourseBuilder, and Competency Profiles allow your administrators easy, convenient methods to document all six areas of competency as defined by CLIA and the CAP Laboratory Accreditation Program.
- **Access anywhere.** The Competency Assessment Program is cloud based, so it's available 24/7 from any PC, laptop, or tablet—wherever you have an Internet connection. Courses are available for users throughout the subscription period.
- **Stay focused.** Use instrument-specific checklists for assessing competency and training.
- **Remain in compliance.** Many of the ready-made educational courses provide your staff the opportunity to earn CE credits.

Add Safety & Compliance Courses Especially Developed for the Laboratory

As an add-on option, Competency Assessment Program offers a package of seven non-credit, complementary safety and compliance courses—appropriate for annual laboratory-specific compliance training and for clinical laboratory science students prior to clinical rotations. These courses include:

- OSHA Bloodborne Pathogens
- OSHA Hazard Communication and Chemical Hygiene
- OSHA Electrical Safety
- OSHA Fire Safety
- OSHA Formaldehyde
- Tuberculosis Awareness for Health Care Workers
- Medical Error Prevention: Patient Safety

The CAP updates these courses as necessary to reflect changes in regulations or best practices.

With the Competency Assessment Program, you can keep your laboratory organized and inspection-ready every day of the year. Choose the Competency Assessment Program subscription that fits your lab. Please refer to the ordering information and course descriptions on the following pages. For more information, visit cap.org and choose Learning for Laboratory Professionals via the Learning tab.

Number of Users	Competency Assessment Program	Competency Assessment Program with Optional Safety & Compliance Courses**
1	CA0001	CA0001 + XCA0001
2 to 50	CA0050	CA0050 + XCA0050
51 to 250*	CA0250	CA0250 + XCA0250

*For subscriptions for more than 250 users, please contact the CAP for more information.
**Safety & Compliance Course subscriptions require a standard Competency Assessment Program subscription.

Assessment Course Schedule

Discipline	January 2019 Release	July 2019 Release
Blood Banking/Transfusion Medicine—Generalist	Blood components—storage, handling, and selection	Quality control in the blood bank laboratory
Blood Banking/Transfusion Medicine—Specialist	Blood components—storage, handling, and selection	Quality control in the blood bank laboratory
Chemistry	Cardiac biomarkers	Therapeutic drug monitoring
Hematology and Coagulation	Erythrocyte inclusions	White blood cells
Histology	Quality management in histology	IHC - part 1
Immunology	Hepatitis testing	Rapid serology kit tests
Microbiology—Generalist	Blood cultures	Microbiology of the gastrointestinal tract
Microbiology—Specialist	Blood cultures	Microbiology of the gastrointestinal tract
Phlebotomy/Specimen Processing	Common pitfalls in specimen processing	General specimen handling and transportation requirements
Point-of-Care Testing	Whole blood glucose testing	Blood gas testing
Quality Programs/Management	Investigating occurrences (occurrence reports, root cause analysis, corrective action)	Development and implementation of a quality management program
Safety	Bloodborne pathogens	General laboratory safety
Urinalysis/Body Fluids	Physical and chemical urinalysis	Microscopic urinalysis - part 1

Pro Course Schedule

Discipline	January 2019 Release	July 2019 Release
Blood Banking/Transfusion Medicine	Antibody screen and ID	Transfusion reactions
Chemistry	Liver and renal testing	Chemistry QC, calibration, and reportable range
Hematology and Coagulation	Common coagulation tests	Platelet testing, morphology, and disorders
Histology	Safety issues in the histology laboratory	Special stains
Immunology	Qualitative HIV testing	Molecular amplification methods for detection of infectious diseases
Microbiology	Gram stain: organism detection and differentiation	Urine and body fluid cultures
Phlebotomy/Specimen Processing	Challenges of phlebotomy: pediatric blood collection, alternate sites, and difficult draws	Specimen collection for workplace urine drug testing programs and forensic drug and alcohol testing
Point-of-Care Testing	Whole blood prothrombin time and INR (PT/INR) testing	Cardiac biomarkers
Quality Programs/Management	Laboratory management: monitoring the quality control program	Competency evaluation
Safety	Fire and electrical safety	Ergonomics
Urinalysis/Body Fluids	Cerebrospinal fluid analysis	Semen analysis

Safety & Compliance Courses

OSHA Bloodborne Pathogens. Addresses the OSHA Bloodborne Pathogens standard as it applies to clinical and medical laboratories. Covers major bloodborne pathogens, including hepatitis B and HIV. Focuses on proper handling of sharps, personal protective equipment (PPE), engineering controls such as microbiological safety cabinets, and proper work practices like handwashing.

OSHA Hazard Communication and Chemical Hygiene. Describes the OSHA Chemical Hygiene Standard and helps satisfy OSHA requirements for annual training. Explains Haz-Com, the National Fire Protection Agency diamond, the Safety Data Sheet, and common-sense laboratory safety rules applied to clinical laboratory practice.

OSHA Electrical Safety. Addresses electrical safety and electrical hazards commonly found in the clinical laboratory. Covers prevention and safety measures, fighting electrical fires, and treatment of electrical injuries.

OSHA Fire Safety. Teaches the basics of fire safety in the clinical laboratory, including classes of fire and key acronyms, such as PASS and RACE. Addresses fire prevention, drills, and firefighting techniques.

OSHA Formaldehyde. Covers essentials for any laboratory that uses formaldehyde or formalin. Shares facts about formaldehyde, safety risks, proper handling procedure, monitoring, spill clean-up, and personal protective equipment.

Tuberculosis Awareness for Health Care Workers. Provides background information about spread of tuberculosis, purified protein derivative (PPD) testing procedures, CDC guidelines, and methods of control.

Medical Error Prevention: Patient Safety. Includes potential causes of medical errors in the clinical laboratory, important legislation and definitions, and steps laboratory professionals can take to reduce the impact of medical errors in their workplace. Serves as an ideal part of an effective medical error reduction program. Appropriate for both experienced and newer laboratory personnel.

Note: The Safety & Compliance courses are not available for purchase separately. The courses listed above do not offer CE credit.

Enhance the culture of patient safety in your laboratory

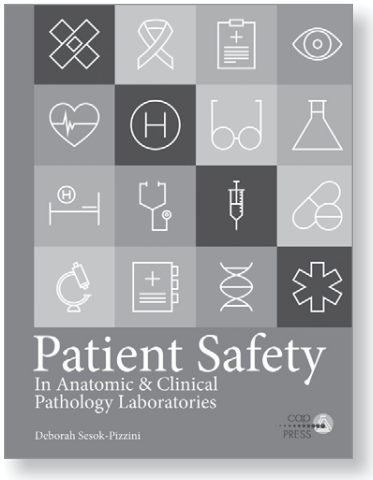
Connect the patient safety culture in your laboratory to the overall mission and goals of your health care enterprise.

- Prevent errors in communication, handoffs, and transitions
- Use technology to improve laboratory patient safety
- Learn how cognitive bias can contribute to patient safety errors
- Build high-reliability teams
- Engage the patient navigator to address safety issues through continuity and coordination of care
- Develop and implement a patient safety curriculum for the laboratory
- Understand how accreditation milestones advance patient safety initiatives

Select Patient Safety in Anatomic & Clinical Pathology Laboratories (PUB316) on your Surveys order form.

Or, view sample pages and order online:

- printed books at estore.cap.org
- ebooks at ebooks.cap.org



Item number: PUB316
Softcover; 128 pages; 2017

QM*Ed*™ Online Educational Courses

Learn quality tools and techniques with case examples from medical laboratories.

Program information

- CAP Quality Management Educational Resources (QM*Ed*) courses help you improve your processes and eliminate waste.
- CAP QM*Ed* courses help you build a quality management system—one piece at a time—that sustains your continuous improvement and Lean efforts.
- CAP QM*Ed* courses are delivered online via a highly interactive user interface that allows you to learn at your own pace.
- All CAP QM*Ed* courses are licensed for one year, allow sharing of logins, and include continuing education (CE) credit.

CAP online QM*Ed* courses will help you:

- Understand the concept of a quality management system
- Self-assess your current QMS against international quality standards
- Plan and resource for the development of your QMS
- Interpret ISO 15189 requirements
- Improve your document control system
- Perform internal audits using tracer audit and process audit methods
- Implement and refine occurrence management with root cause analysis
- Write an effective quality manual
- Measure, analyze, and set goals with senior management

About the Courses

Quality Culture
Order ISOEDCL

Designed for laboratory medical directors, administrative directors, quality managers, and other leaders who can affect the culture of their laboratory through their decisions and actions. The course provides an adaptable program for proactively shaping culture. It includes video commentary by CAP member pathologists.

2 CE credits available

Root Cause Analysis
Order ISOEDRC

Learn real-world methodology to conduct a root cause analysis, along with the tools necessary to implement it. Learn from actual examples of complete root cause analysis based on projects in laboratories like yours. You will even perform key steps based on a participant case study. The course is designed for laboratory quality managers and implementation team members.

6 CE credits available

Mistake Proofing
Order ISOEDMP

Increase your ability to design new processes, modify existing processes, minimize mistakes, and manage your risks. This course provides a methodology focused on five main categories of mistake-proofing tactics and shows examples of these tactics from the domain of laboratory medicine. It includes video commentary by CAP member pathologists with experience using Lean and other process improvement techniques.

4 CE credits available

Internal Auditing
Order ISOEDIA

Increase your capabilities for internal auditing with a proven methodology for process audits, tracer audits, and laser audits. Learn how to prepare for interviews, communicate findings to your quality management team, and use audits to drive process improvements. The course provides detailed, real-world examples you can use to build your own audit plans, plus multimedia presentations of key concepts.

3 CE credits available

Management Review
Order ISOEDMR

This course interprets the ISO 15189 requirements for management review. The CAP's ISO 15189 assessors discuss how to structure the review meeting, communicate results of quality assessments, and prompt strategic decisions from management—all in the context of the overall health of your organization.

2 CE credits available

Quality Manual Development
Order ISOEDQM

This course provides guidance on how to go beyond a quality plan to develop a manual that organizes and communicates your laboratory's quality management system. You will see an example of an effectively structured and written manual so you can organize and create your own. Plus, the CAP's ISO 15189 assessors show you approaches to link your quality policy to quality objectives and metrics.

2 CE credits available

Document Control
Order ISOEDDC

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Quality Management In Anatomic Pathology

Item number: **PUB125**

Softcover; 228 pages; 135+ figures and tables; 2017

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3 Quality Management Tools

Engage in quality measures with the latest Q-PROBES™ programs.

- Gain insight into optimal staffing levels (QP191).
- Benchmark opioid urine drug testing turnaround times and result agreement for initial and definitive tests (QP192).
- Compare invasive breast cancer expression rates for ER, PgR, and HER2 with other laboratories (QP193).
- Investigate the impact of pathologist review of peripheral blood smears (QP194).

Quality Management Tools

New Programs NEW

Discontinued Programs

Physician Satisfaction with Clinical Laboratory Services (QP181)
Laboratory Staff Turnover (QP182)
Technical Competency Assessment of Body Fluid Slide Review (QP183)
Laboratory Result Turnaround Time for Emergency Room Specimens (QP184)
Monitoring of Troponin Metrics for Suspected MI (QM1)

Quality Management Tools

Use the CAP's Quality Management Tools (QMT) to **improve the Total Testing Process** by identifying quality improvement opportunities of selected key processes in the clinical and anatomic pathology laboratories, examining preanalytical, analytical, and postanalytical phases:

- **Establish realistic goals** by comparing performance against similar institutions with comparable demographics
- **Monitor progress** through unique and robust quality indicators on a periodical basis
- **Make effective quality management decisions** based on practical and in-depth individual reports provided to participants
- **Improve efficiencies** to allow time for more patient-centric activities
- **Easily integrate quality management into your daily work processes** with predesigned monitoring tools developed by laboratory professionals and scientists

Q-PROBES™ A One-Time Opportunity to Perform In-Depth Quality Assessment

Q-TRACKS® A Program for Continuous Quality Monitoring

Q-PROBES and Q-TRACKS activities meet the American Board of Pathology Continuing Certification (CC), formerly known as Maintenance of Certification (MOC) requirements.

Purchase Q-PROBES or Q-TRACKS combination packages and save.

Module/Package	Program Code
Four Q-PROBES studies (includes all four studies)	**PRO**
CP/AP Q-TRACKS Monitors (combined CP/AP module includes all 11 QT monitors)	**QTP**
Clinical Pathology Monitors (includes all 10 CP monitors)	**QTC**

Q-PROBES and Q-TRACKS

offer a comprehensive collection of tools to complement your quality management program needs.*

Select Q-PROBES and Q-TRACKS studies to support your quality improvement initiatives.	Preanalytic	Analytic	Postanalytic	Anatomic Pathology	Clinical Pathology	Turnaround Time	Patient Safety	Microbiology	Transfusion Medicine	Chemistry/ Hematology	Customer Satisfaction
Q-PROBES											
Technical Staffing Ratios (QP191) NEW	▮	▮		▮	▮	▮	▮	▮	▮	▮	▮
Opioid Drug Testing Stewardship (QP192) NEW	▮	▮	▮		▮	▮	▮			▮	▮
Expression Rates in Invasive Breast Carcinoma (QP193) NEW		▮		▮			▮				▮
The Impact of Pathologist Review on Peripheral Blood Smears (QP194) NEW	▮	▮			▮	▮	▮			▮	▮
Q-TRACKS											
Patient Identification Accuracy (QT1)	▮			▮	▮		▮				▮
Blood Culture Contamination (QT2)	▮	▮			▮		▮	▮			▮
Laboratory Specimen Acceptability (QT3)	▮				▮					▮	▮
In-Date Blood Product Wastage (QT4)			▮		▮				▮		
Gynecologic Cytology Outcomes: Biopsy Correlation Performance (QT5)	▮	▮		▮			▮				▮
Satisfaction With Outpatient Specimen Collection (QT7)	▮				▮		▮				▮
Stat Test Turnaround Time Outliers (QT8)		▮			▮	▮	▮			▮	
Critical Values Reporting (QT10)			▮		▮		▮			▮	
Troponin Turnaround Times (QT15)	▮	▮	▮		▮	▮	▮			▮	▮
Corrected Results (QT16)			▮		▮		▮	▮	▮	▮	▮
Outpatient Order Entry Errors (QT17)					▮		▮			▮	

*The CAP requires accredited laboratories to have a quality management plan that covers all areas of the laboratory and includes benchmarking key measures of laboratory performance (GEN.13806, GEN.20316, COM.04000). The Joint Commission requires accredited hospitals to regularly collect and analyze performance data (PI.01.01.01, PI.02.01.01). CLIA requires laboratories to monitor, assess, and correct problems identified in preanalytic, analytic, and postanalytic systems (§493.1249, §493.1289, §493.1299).

Q-PROBES

A One-Time Opportunity to Perform In-Depth Quality Assessment

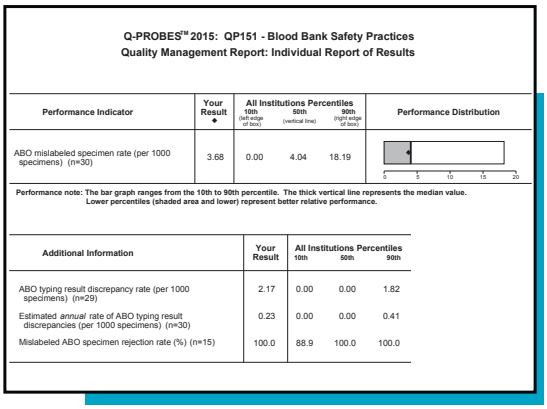
Implement quality monitoring—Use Q-PROBES short-term comprehensive quality studies[1] to learn how to start monitoring and measuring key processes that you may not have followed in the past or that are not commonly monitored in most laboratories. Q-PROBES studies analyze hot topics and industry trends to keep the laboratory current.

Gain experience in data collection and analysis—Participants will collect data during predetermined dates. Based on submitted data, the CAP provides personalized reports with the individual participant's performance compared against other participants.

Strengthen your quality assessment expertise—The CAP's pathologist experts provide in-depth discussion and identify best practices for laboratories to strive for. In addition, consolidated results of the studies are carefully reviewed and analyzed to be published in the form of scientific articles. Such articles give participants an extra layer of information to be utilized for further analysis.

Participants in the Q-PROBES program receive:

- User guide
- Templates and instructions for data collection
- Individual report, how to interpret the results guide, overall aggregated data
- Data Analysis and Critique that includes data distributions and initial analysis of laboratory practices and commentaries from pathologist experts on improvement opportunities



Q-PROBES™ 2015: QP151 - Blood Bank Safety Practices
Quality Management Report: Individual Report of Results

Performance Indicator	Your Result ◆	All Institutions Percentiles 10th (left edge of box)	50th (vertical line)	90th (right edge of box)	Performance Distribution
ABO mislabeled specimen rate (per 1000 specimens) (n=30)	3.68	0.00	4.04	18.19	

Performance note: The bar graph ranges from the 10th to 90th percentile. The thick vertical line represents the median value. Lower percentiles (shaded area and lower) represent better relative performance.

Additional Information	Your Result	All Institutions Percentiles 10th	50th	90th
ABO typing result discrepancy rate (per 1000 specimens) (n=29)	2.17	0.00	0.00	1.82
Estimated *annual* rate of ABO typing result discrepancies (per 1000 specimens) (n=30)	0.23	0.00	0.00	0.41
Mislabeled ABO specimen rejection rate (%) (n=15)	100.0	88.9	100.0	100.0

- Notification of the scientific articles that are published with the results of the studies

Q-PROBES activities meet the American Board of Pathology Continuing Certification (CC), formerly known as Maintenance of Certification (MOC) requirements.

[1] Q-PROBES studies are available only one time annually and may not be repeated in the future.

Technical Staffing Ratios QP191

NEW

Introduction

Laboratory staff play an important role in the detection, diagnosis, and treatment of disease by performing tests in laboratories. These staff account for two-thirds of direct clinical laboratory costs. This Q-PROBES study is designed to produce data that will assist laboratorians in managing those costs and gauging their staffing levels.

Laboratories participating in this study will submit data on their overall laboratory staffing levels and on their staffing levels for four laboratory testing sections including anatomic pathology, chemistry/hematology/immunology, microbiology, and transfusion medicine. From these levels, we will calculate staffing ratios for these four sections relative to overall laboratory staffing, managerial staffing, and billable tests. We will benchmark your laboratory's staffing ratios against those of other institutions participating in this study, and where applicable, against peer groups with similar billable test profiles.

Enrollment in this Q-PROBES study will help laboratory directors address CAP Laboratory Accreditation Program Checklist statement TLC.11300, which requires sufficient numbers of personnel are available to meet the needs of the laboratory.

Objectives

The aim of this Q-PROBES study is to measure staffing levels in different areas of the laboratory, calculate key staffing ratios, and compare all staffing ratios with those of other institutions participating in this study.

Data Collection

Participants will use their laboratory or institution's revenue and usage reports to obtain billable test counts and staffing figures for the most recently completed fiscal year.

Performance Indicators

- Overall Laboratory
  - Non-management laboratory full-time equivalent employees (FTE)/management FTE
  - Specimen accessioning FTE/non-management FTE
  - Laboratory quality assurance FTE/all laboratory staff FTEs
  - FTEs preparing send-out tests/non-management FTE
  - Billable tests/specimen accessioning FTE
- Anatomic Pathology
  - Histology blocks/histology non-management FTE
  - Cytology accessions/cytology non-management FTE
  - Non-management FTE/management FTE
- Chemistry/Hematology/Immunology
  - Total billable tests/non-management FTE
  - Non-management FTE/management FTE
- Microbiology
  - Total billable tests/non-management FTE
  - Non-management FTE/management FTE
- Transfusion Medicine
  - Crossmatches or type and screens/non-management FTE
  - Transfused units/non-management FTE
  - Non-management FTE/management FTE

This is a one-time study conducted in the first quarter.

NEW

Opioid Drug Testing Stewardship QP192

Introduction

Deaths due to drug overdose continue to rise across the country. Opioids, traditionally prescribed for chronic pain mitigation, account for many of these deaths. Comprehensive programs that focus on drug prescriptions and dependency are required to address the drug epidemic, including monitoring patients through drug testing. Drug testing plays an important role in chronic pain and addiction programs by evaluating compliance with treatment, alerting physicians to potential drug diversion, and documenting that common unprescribed and/or undisclosed drugs are not being taken.

Specimens are generally tested using one of two approaches: by initial (screening) rapid methods that may be followed by more sensitive definitive (confirmatory) methods, or alternatively, by targeted testing only (no screening) using definitive methods. The turnaround times (TATs) of the initial and definitive tests, as well as the performance characteristics of the testing methodology, can have potential effects on patient care and personal aspects of a patient's life.

This Q-PROBES study will focus on non-emergency laboratory urine drug testing of patients (eg, such as those in drug treatment programs, chronic pain management programs, or by physician referral) by examining test TATs, and the methods that laboratories and clinics use to test urine specimens for the presence of drugs. TATs will be measured for both initial and definitive testing. Initial tests are used to identify classes of drugs present in the urine and rely on a set threshold above which a positive result is produced; these tests are often not designed to detect lower concentrations of a drug. Definitive testing of a specimen is used to confirm that a drug detected on initial testing is truly present and in some cases, to document that low levels of a drug are not present when initial testing is negative.

Participation in this Q-PROBES study helps address the following Joint Commission pain assessment and management standards for hospitals through oversight of development and monitoring performance improvement activities, establishment of protocols, quality metrics collection, data review, and data analysis: LD.04.03.13, MS.05.01.01, PC.01.02.07, PI.01.01.01, and PI.02.01.01.

Objectives

The purpose of this study is to benchmark opioid urine drug testing turnaround times for initial and definitive testing, and to examine differences between initial and definitive test results. Laboratories may use this TAT data to determine if changes should be made to the methods and processes used to test urine specimens for opioid drugs. Participants may identify gaps in testing protocols that produce initial results that are inconsistent with definitive testing results.

Data Collection

Participants will retrospectively record collection, accession, and result times for up to 50 outpatient urine specimens ordered for drug testing on patients from non-emergency sources including chronic pain support programs, addiction services, and physician referrals.

Time intervals may be retrieved from the health care or laboratory information system. Specimen collection time, accession time, and test result time will be collected for each initial test. Definitive order time and result time will be collected for each definitive test. Study results will be provided based on the TATs that are reported to enable institutions only performing initial testing, or definitive testing only, to receive TAT results reflective of their testing process. Institutions that send out opioid testing (initial, definitive, or both) are eligible for participation. Participants will provide drug testing method(s) used for analysis (eg, immunoassay, chromatography, mass spectrometry), and location of drug testing will be recorded.

Each participating laboratory will provide additional general practice characteristics related to opioid drug testing, such as protocol for initial and definitive testing, and drug panel availability.

Performance Indicators

- Time from sample collection to initial test accession
- Time from initial test accession to initial test result
- Time from sample collection to initial test result
- Time from definitive testing order to definitive test result
- Percent agreement between initial test results and definitive test results (%)

This is a one-time study conducted in the second quarter.

NEW

Expression Rates in Invasive Breast Carcinoma QP193

Introduction

The 2010 ASCO/CAP guideline recommendations for immunohistochemical testing of estrogen (ER) and progesterone (PgR) receptors in breast cancer suggest that laboratories enact a quality management program encompassing all aspects of testing. With regard to the analytic phase of testing, the guideline suggests periodic trend analysis to confirm an appropriate number of ER-positive breast cancers in the patient population served by the laboratory.

Enrollment in QP193 will assist participating laboratories in comparing their predictive marker results with those of other laboratories, and address compliance with CAP Laboratory Accreditation Program Checklist statement ANP.22970, annual result comparison of immunohistochemical tests performed on invasive breast carcinoma specimens.

Objectives

This study aims to compare invasive breast cancer expression rates for ER, PgR, and HER2 with those of other laboratories. Expression rates will be stratified by histologic type and patient age, where applicable, to provide participants further insight into this analytic phase of immunohistochemical testing.

Data Collection

During a one-month period, participants will provide ER, PgR, and HER2 test results from all invasive breast cancer cases. Other case-specific factors will be collected including patient age, histologic tumor type, method of assessment, tumor grade, and tissue type.

Participants will also provide institution level ER/PgR positive rates, and HER2 2+ and 3+ result rates from the previous calendar year or most recent annual data aggregation.

Information regarding general practices involved in expression testing will be collected, such as antibody clones used in testing.

Performance Indicators

- ER positive rate (%)
- PgR positive rate (%)
- HER2 score 2+ rate (%)
- HER2 score 3+ rate (%)

This is a one-time study conducted in the third quarter.

NEW

The Impact of Pathologist Review of Peripheral Blood Smears QP194

Introduction

Automated hematology analyzers that produce image-guided cell differential counts and morphologic flags potentially provide greater accuracy and improve the detection of morphologic abnormalities in peripheral blood specimens. Manual microscopic reviews of peripheral blood (PB) smears by the technologist, and subsequently by the pathologist, are typically performed on cases that meet certain criteria, either recommended by manufacturing companies or established by laboratory directors based on the International Society of Laboratory Hematology guidelines. In addition, a significant proportion of PB smear review cases by pathologists are directly requested by providers.

Pathologists reviewing peripheral blood smears can play a pivotal role in patient care by recognizing and confirming the presence of significant morphologic abnormalities such as blasts, schistocytes, and malignant lymphocytes. However, for PB smear reviews directly requested by providers, careful reviews by experienced technologists are often sufficient, and reviews by pathologists may not add significant value. In this scenario, laboratories may consider adjusting the PB smear review policy in order to focus pathologist time and expertise on those cases that truly require it.

Enrollment in this Q-PROBES study will help participants address the CAP Laboratory Accreditation Program Checklist statement HEME.34600 regarding criteria for blood film review.

Objectives

This study will investigate the impact of peripheral blood smear review by the pathologist when requested by the technologist or provider, and measure the rate of detection of clinically relevant findings reported by the pathologist. The study will provide a measure of the rate of peripheral smear differentials that undergo pathologist review compared to all peripheral smear differentials, and the rate of peripheral smear differentials that undergo pathologist review compared to all complete blood counts (CBCs) performed during the study period.

Data Collection

During a four-week study period, participants will prospectively collect information on PB smears requested for pathologist review, including the request source and reason for the request for both inpatients and outpatients. Pathologists will select clinically relevant findings that they added to the case during their review from a standardized short list. For cases requested by technologists, pathologist agreement status will be recorded. Pathologists will indicate if their review provided a morphologic diagnosis and/or recommendations for further evaluation. In addition, the total number of provider-ordered PB smear pathologist reviews, PB smear differentials, and CBCs performed during the study period will be collected.

Participants will provide additional information about general peripheral blood smear review practices in their institutions, including the chosen criteria that result in a pathologist-reviewed slide.

Performance Indicators

- Rate of clinically relevant findings disclosed by pathologists during provider-ordered PB smear review (%)
- Rate of clinically relevant findings disclosed by pathologists during technologist-requested PB smear review (%)

Additional Measures

- Peripheral smears that undergo pathologist review/All manual differentials performed during the study period (%)
- Peripheral smears that undergo pathologist review/All CBCs performed during the study period (%)

This is a one-time study conducted in the fourth quarter.

Q-TRACKS

A Program for Continuous Quality Monitoring

Identify and monitor opportunities for quality improvement over time

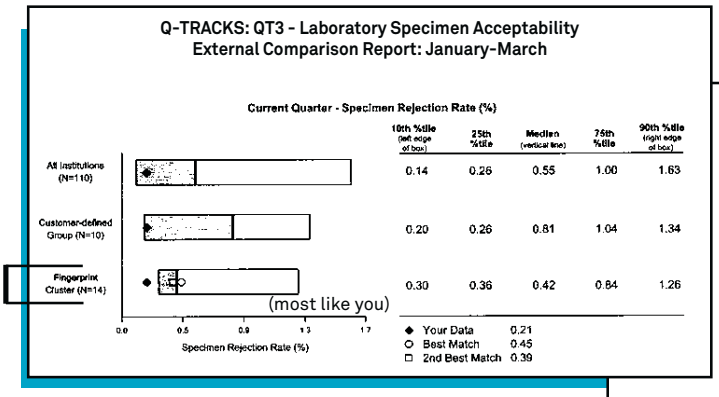
Use established Q-TRACKS programs to identify opportunities to quantitate your quality improvement measures.

Evaluate quality improvements

Measure the effectiveness and impact of implemented changes in key processes. The individual reports include performance of quality indicators over time, benchmarking information, trends, and suggested areas for improvement.

Step 1:

Establish realistic benchmarks by comparing your laboratory to others like yours.



Q-TRACKS: QT3 - Laboratory Specimen Acceptability
External Comparison Report: January-March

Current Quarter - Specimen Rejection Rate (%)

	10th %tile (left edge of box)	25th %tile	Median (vertical line)	75th %tile	90th %tile (right edge of box)
All Institutions (N=110)	0.14	0.26	0.55	1.00	1.63
Customer-defined Group (N=10)	0.20	0.26	0.81	1.04	1.34
Fingerprint Cluster (N=14)	0.30	0.36	0.42	0.84	1.26

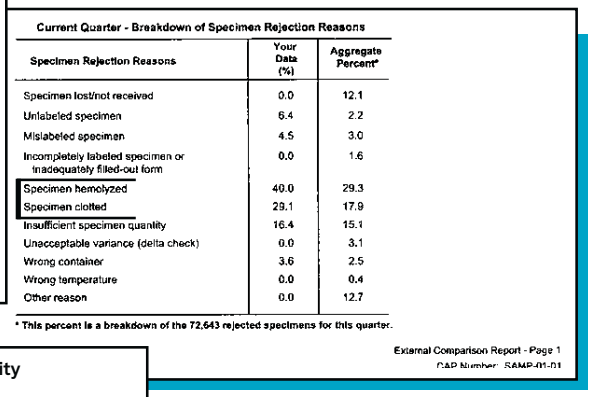
(most like you)

Specimen Rejection Rate (%)

◆ Your Data 0.21
○ Best Match 0.45
□ 2nd Best Match 0.39

Step 2:

Identify improvement opportunities.

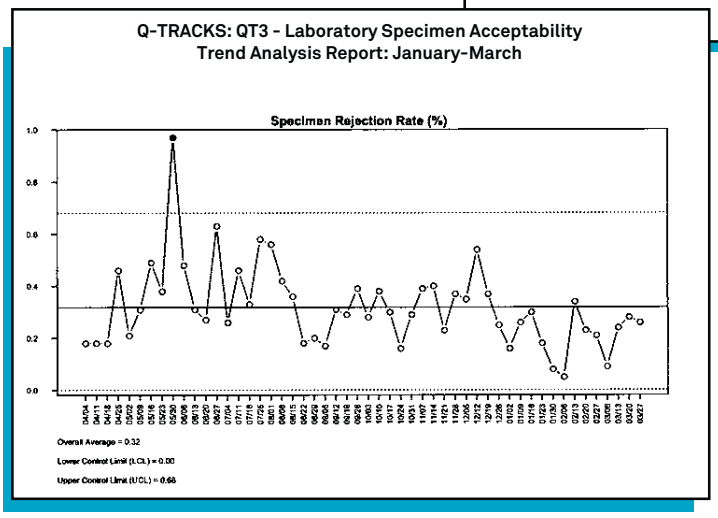


Current Quarter - Breakdown of Specimen Rejection Reasons

Specimen Rejection Reasons	Your Data (%)	Aggregate Percent*
Specimen lost/not received	0.0	12.1
Unlabeled specimen	6.4	2.2
Mislabeled specimen	4.5	3.0
Incompletely labeled specimen or inadequately filled-out form	0.0	1.6
Specimen hemolyzed	40.0	29.3
Specimen clotted	29.1	17.9
Insufficient specimen quantity	16.4	15.1
Unacceptable variance (delta check)	0.0	3.1
Wrong container	3.6	2.5
Wrong temperature	0.0	0.4
Other reason	0.0	12.7

* This percent is a breakdown of the 72,643 rejected specimens for this quarter.

External Comparison Report - Page 1



Q-TRACKS: QT3 - Laboratory Specimen Acceptability
Trend Analysis Report: January-March

Specimen Rejection Rate (%)

Overall Average = 0.32
Lower Control Limit (LCL) = 0.00
Upper Control Limit (UCL) = 0.66

Step 3:

Monitor improvement over time to ensure accurate results, patient safety, and quality patient care.

Participants in the Q-TRACKS program receive:

- User Guide
- Templates and instructions for data collection
- Quarterly reports that include fingerprint clusters, customer-defined groups, and all institution comparisons
- Peer directory

Q-TRACKS activities meet the American Board of Pathology Continuing Certification (CC), formerly known as Maintenance of Certification (MOC) requirements.

So you're going to collect a blood specimen

Up to 70% of laboratory errors occur prior to sample analysis and testing. Ensure everyone on your team is equipped to procure a quality blood specimen with this modern update to the classic reference guide.

- Step-by-step instructions for venipuncture, skin puncture, and infant heelstick
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- Procedures for blood smears, blood cultures, and neonatal screening
- Special considerations for the difficult venipuncture
- Four ways to inspire confidence in your patient

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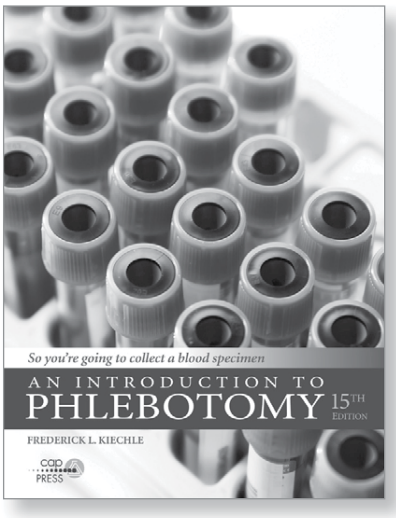

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Q-TRACKS Clinical Pathology Monitors

Patient Identification Accuracy QT1

In order to report accurate laboratory results and meet The Joint Commission National Patient Safety Goal #1: "Identify patients correctly," institutions must properly identify patients. Since most laboratories perform testing away from the patient, patient identification, labeling of specimens, and coordination with test requisitions must be performed accurately and completely. By continuously monitoring for wristband errors, participants can promptly identify and correct problems that may interfere with patient care services. Use this monitor to help meet CAP Laboratory Accreditation Program General Checklist statements GEN.20316, GEN 40490, and GEN.40825.

Objectives

Assess the incidence of wristband errors within individual institutions, compare performance between participating institutions, and identify improvement opportunities.

Data Collection

On six predetermined days per month, participants will monitor patient wristband identification for all phlebotomies performed at their institution. Phlebotomists will tally the total number of wristbands checked, the number of errors found, and the types of wristband errors. This monitor includes all routinely wristbanded patients. Include emergency department patients only if the emergency department routinely applies wristbands to these patients.

Performance Indicator

- Wristband error rate (%)

Performance Breakdown

- Breakdown of wristband error types (%)

Blood Culture Contamination QT2

Despite advances in blood culture practices and technology, false-positive blood culture results due to contaminants continue to be a critical problem. Blood culture contamination rate, the primary indicator of preanalytic performance in microbiology, is associated with increased length of hospital stay, additional expense, and the administration of unnecessary antibiotics. The CAP and other accrediting organizations require you to monitor and evaluate key indicators of quality for improvement opportunities. Use this monitor to help meet CAP Laboratory Accreditation Checklist statement note MIC.22630: "It is recommended that blood culture statistics, including number of contaminated cultures, be maintained and reviewed regularly by the laboratory director. The laboratory should establish a threshold for an acceptable rate of contamination. Tracking the contamination rate and providing feedback to phlebotomists or other persons drawing cultures has been shown to reduce contamination rates." This will also help laboratories meet Joint Commission Standard QSA 04.07.01 EP3.

Objective

Determine the rate of blood culture contamination using standardized criteria for classifying contaminants.

Data Collection

On a monthly basis, participants will tabulate the total number of blood cultures processed and the total number of contaminated blood cultures. Blood cultures from neonatal patients are tabulated separately. For the purposes of this study, participants will consider a blood culture to be contaminated if they find one or more of the following organisms in only one of a series of blood culture specimens: Coagulase-negative *Staphylococcus; Micrococcus;* Alpha-hemolytic viridans group streptococci; *Propionibacterium acnes*; *Corynebacterium* sp. (diptheroids); or *Bacillus* sp. Participants have the option to monitor institution-specific subgroups, for example, a specific department or patient population.

Performance Indicators

- Neonatal contamination rate (%)
- Other contamination rate (%)
- Overall contamination rate (%)

Look for your input forms approximately three weeks prior to the quarter.

Laboratory Specimen Acceptability QT3

A substantial amount of rework, diagnostic and therapeutic delay, and patient inconvenience can result from specimen rejection. Patient redraws may result from unlabeled, mislabeled, and incompletely labeled specimens; clotted and/or hemolyzed specimens; or insufficient specimen quantity. By continuously monitoring specimen acceptability, collection, and transport, laboratories can promptly identify and correct problems. Enrollment in this Q-TRACK may assist the laboratory in monitoring compliance with CAP Laboratory Accreditation Program General Checklist statement GEN.40825: "There is a system to positively identify all patient specimens, specimen types, and aliquots at all times."

Objective

Identify and characterize unacceptable blood specimens that are submitted to the chemistry and hematology/coagulation sections of the clinical laboratory for testing.

Data Collection

This monitor includes all blood specimens submitted for testing to the chemistry and hematology departments of the clinical laboratory. On a weekly basis, participants will record the total number of specimens received, the number of rejected specimens, and the primary reason each specimen was rejected.

Performance Indicator

- Specimen rejection rate (%)

Performance Breakdown

- Breakdown of reasons for rejection (%)

In-Date Blood Product Wastage QT4

Blood for transfusion is a precious resource. At a minimum, wastage of blood that is not out-of-date represents a financial loss to the health care system. More ominously, systemic wastage of blood may reflect an environment of care that is out of control and could pose risks to patient safety. Enrollment in this program helps laboratories fulfill the CAP Laboratory Accreditation Program Checklist statement TRM.40875 that requires the transfusion service medical director to monitor and audit transfusion practices to ensure the appropriate use of blood, and the AABB Standards for Blood Banks and Transfusion Services assessment 8.2 that requires transfusing facilities to have a peer-review program that monitors transfusion practices for blood components.

Objective

Compare the rates of blood product wastage (ie, units discarded in-date) in participating hospitals and track rates of improvement over time.

Data Collection

On a monthly basis, participants will use blood bank records to obtain information on the total number of units transfused for each type of blood component. Participants will track the number and type of blood units that are wasted in-date and the circumstances of wastage. This monitor includes the following types of blood components: red blood cells (allogeneic), frozen plasma, platelet concentrates, single donor platelets, and cryoprecipitate.

Performance Indicators

- Overall blood wastage rate (%)
- Wastage rates by blood component type (%)

Performance Breakdown

- Breakdown of circumstances of wastage (%)

Look for your input forms approximately three weeks prior to the quarter.

Satisfaction With Outpatient Specimen Collection QT7

Specimen collection is one of the few areas of laboratory medicine that involves direct outpatient contact. As a result, patient satisfaction with this service is a vital indicator of quality laboratory performance. The CAP's Laboratory Accreditation Program requires measurement of patient satisfaction with laboratory services (Checklist statement GEN.20335). Use this monitor to help meet this requirement.

Objective

Assess patient satisfaction with outpatient phlebotomy services by measuring patients' assessments of waiting time, discomfort level, courteous treatment, and overall satisfaction.

Data Collection

On a monthly basis, participants will provide copies of a standardized questionnaire in English and Spanish to a minimum of 25 outpatients (maximum of 99 outpatients) using predetermined data collection criteria. This monitor includes any outpatient undergoing venipuncture. This monitor excludes patients seen in the emergency department, ambulatory surgery area, urgent care facility, chest pain center, 23-hour short-stay facility, employee health department, outpatient health screening fair/promotion, dialysis center, nursing home, or extended care facility.

Performance Indicators

- Satisfaction scores and satisfaction rates (% of patients rating 4 or 5) for the following categories:
  - o Overall experience
  - o Waiting time
  - o Patient comfort
  - o Courtesy
  - o Patient privacy
  - o Laboratory hours of operation

Stat Test Turnaround Time Outliers QT8

The stat test turnaround time (TAT) outlier rate, expressed as a percentage of tests missing target reporting times, is a measure of outcomes that evaluates how well the laboratory meets patient and clinician needs. This monitor helps meet CAP Laboratory Accreditation Program Checklist statement GEN.20316: "The QM program includes monitoring key indicators of quality in the preanalytic, analytic, and postanalytic phases."

Objective

Monitor the frequency that stat test TAT intervals exceed institutional stat test TAT expectations.

Data Collection

Before beginning data collection, participants will establish a specimen receipt-to-report deadline for emergency department (ED) stat potassium tests. On six predetermined days per month, participants will monitor the TAT of up to 10 randomly selected ED stat potassium tests on each of three, eight-hour shifts (up to 180 tests per month) and track the number of ED stat potassium results reported later than the established reporting deadline. This monitor includes stat potassium tests ordered as part of a panel and excludes stat potassium levels that are requested on body fluids other than blood, as part of timed or protocol studies, or after the specimen arrives in the laboratory.

Performance Indicator

- Stat test TAT outlier rate (%)

Performance Breakdowns

- Breakdown of outliers by shift (%)
- Breakdown of outliers by day of week (%)

Look for your input forms approximately three weeks prior to the quarter.

Critical Values Reporting QT10

Laboratories commonly refer to critical values as results requiring immediate notification to the physician or caregiver for necessary patient evaluation or treatment. Regulations from agencies and accreditors such as the CMS, The Joint Commission, and the CAP Laboratory Accreditation Program (Checklist statement GEN.20316, COM.30000, COM.30100) mandate that laboratories develop and implement an alert system for critical values. Use this monitor to document compliance with your laboratory's alert plan.

Objective

Evaluate the documentation of successful critical values reporting in the general laboratory for inpatients and outpatients.

Data Collection

On a monthly basis, participants will evaluate 120 inpatient and 120 outpatient critical values. Data collection will include general chemistry, hematology, and coagulation analytes on the critical values list. Retrospectively, participants will record the total number of critical values monitored and the number with documentation of successful notification. In addition, participants will provide the number of critical values that were not communicated within three hours, the number of failed notifications due to laboratory oversight, and the number of successful notifications to licensed caregivers. This monitor will exclude critical values for cardiac markers, drugs of abuse, therapeutic drug levels, urinalysis, blood gases, point-of-care tests, and tests performed at reference laboratories.

Performance Indicators

- Total critical values reporting rate (%)
- Inpatient critical values reporting rate (%)
- Outpatient critical values reporting rate (%)
- Failed notification (<3 hours) rate (%)

Look for your input forms approximately three weeks prior to the quarter.

Build a culture of quality in your laboratory

The QMEd online course Quality Culture gives you the tools to:

- Assess your current culture
- Prioritize your needs
- Use proven change levers that make a lasting difference

The course will help you build a culture characterized by:

- Innovation
- Speaking Up
- Going Above and Beyond
- Transparency
- Process Orientation
- Teamwork and Involvement
- Risk Awareness

Video presentations from CAP member pathologists included.

See p. 18. Choose code ISOEDCL on your Surveys order form.

Troponin Turnaround Times QT15

Patients presenting to the emergency department (ED) with chest pain must be evaluated quickly. Rapid serum troponin measurement is an important part of ED practice that can provide decisive information for patient management. Reducing delays in troponin testing has been reported to result in shorter length of stay in the ED and more rapid initiation of anti-ischemic treatment. EDs and chest pain centers should, therefore, have effective procedures for ensuring optimal turnaround time (TAT) for troponin testing and a process for ongoing monitoring to ensure that performance meets expectations.

QT15 is enhanced for 2019 with additional time intervals to help pinpoint process time challenges. Laboratories may use this monitor to help meet CAP Laboratory Accreditation Program Checklist statement GEN.20316 QM Indicators of Quality. The American College of Cardiology and the American Heart Association recommend troponin as the preferred diagnostic biomarker in their Acute Coronary Syndromes guideline.

Objective

This study will assist participating laboratories to determine and monitor:

- The median TATs for processes from order time through result availability, with up to five time intervals within the total testing process
- The percent compliance for troponin results with their institution's established deadline

Data Collection

Six days per month, collect data from nine patients presenting to the ED with chest pain and tested for troponin level. Data includes time of troponin test order, specimen collection, laboratory receipt, and result availability. Participants are not required to provide data from each TAT component. Participants will select TAT metrics that they wish to monitor, with the option to monitor all metrics.

Participants will also complete a questionnaire about clinical and laboratory practices related to troponin testing.

Performance Indicators

Median TATs for the following time intervals:

- Test order to specimen collection
- Specimen collection to laboratory receipt
- Laboratory receipt to result availability
- Specimen collection to result availability
- Test order to result availability

Compliance (%) with insitutional threshold for the following time intervals:

- Specimen collection to result availability
- Test order to result availability

Look for your input forms approximately three weeks prior to the quarter.

Corrected Results QT16

The CAP developed this Q-TRACKS monitor in recognition of the importance of timely detection and correction of erroneous laboratory results. Accuracy in laboratory results is critical to the effectiveness of a physician's plan of care for a patient. An erroneous result can delay or alter patient treatment; therefore, detection of erroneous results should be a priority in every laboratory and should be monitored as a key quality indicator. Help measure your compliance with CLIA 493.1299, Postanalytic Systems Quality Assessment, and help meet CAP Laboratory Accreditation Program Checklist statement GEN.20316 with this monitor.

Objective

Monitor the number of corrected test results within individual institutions and compare performance with that of all institutions and those institutions similar to yours.

Data Collection

On a monthly basis, participants will monitor the number of corrected test results and the total number of billable tests for that month. Include test results for all patients in all care settings with the following exclusions: anatomic pathology tests, narrative physician-interpreted tests (eg, bone marrow biopsies and peripheral smear reports), and point-of-care tests.

Performance Indicator

- Test result correction rate (per 10,000 billable tests)

Outpatient Order Entry Errors QT17

Order accuracy bears an obvious relationship to the quality of laboratory testing. When the laboratory fails to complete a requested test, it delays the diagnostic evaluation, consumes resources, causes patient inconvenience, and may prolong therapy. When the laboratory completes a test that was not requested, the cost of care increases, patients may be subjected to unnecessary phlebotomy, and laboratory efficiency declines. Use this monitor to help meet CAP Laboratory Accreditation Program Checklist statement GEN.20316 for test order accuracy and meet The Joint Commission Standard DC.01.02.01: The laboratory performs testing based on written laboratory test orders.

Objective

Measure the incidence of incorrectly interpreted and entered outpatient physician test orders into the laboratory information system, compare performance across institutions, and track performance over time.

Data Collection

On six preselected weekdays per month, participants will compare eight outpatient requisitions or order sheets to the orders entered into the laboratory's information system to determine if any order entry errors occurred.

This monitor includes test order review from ambulatory outpatients seen in offices and clinics operated by your laboratory services, private physician offices, nursing homes, extended care facilities, and free-standing phlebotomy areas. Also included are send-out tests, chemistry, hematology, microbiology, immunology, toxicology, and urinalysis tests on outpatients. Order entry error categories include requesting physician errors; incorrect, missing, and extra test errors; test priority errors; and copy or fax result errors.

This monitor excludes tests performed in transfusion medicine or anatomic pathology and also excludes tests from the following patient care settings: inpatient, emergency department, ambulatory surgery, urgent care, chest pain center, 23-hour short-stay facility, employee health department, outpatient screening fair/promotion, and dialysis center.

Performance Indicators

- Overall outpatient order entry error rate (%)
- Order entry error rates by type (%)

Performance Breakdown

- Breakdown of error types (%)

Look for your input forms approximately three weeks prior to the quarter.

Q-TRACKS Anatomic Pathology Monitor

Gynecologic Cytology Outcomes: Biopsy Correlation Performance QT5

The correlation of cervicovaginal cytology (Pap test) findings with cervical biopsy results is a significant part of the cytopathology laboratory's quality assurance program. By monitoring this correlation, the laboratory can identify and address potential problems requiring improvement, thereby ensuring better patient results. This Q-TRACKS study helps laboratories meet CAP Laboratory Accreditation Program Cytopathology Checklist statements CYP.07543 and CYP.07600 on cytologic/histologic correlation, and The Joint Commission Standard QSA.08.06.03: The cytology laboratory has a process to correlate cytologic interpretations with the corresponding histologic finding.

Objective

Quantify the correlation between the findings of cervicovaginal cytology and corresponding histologic material.

Data Collection

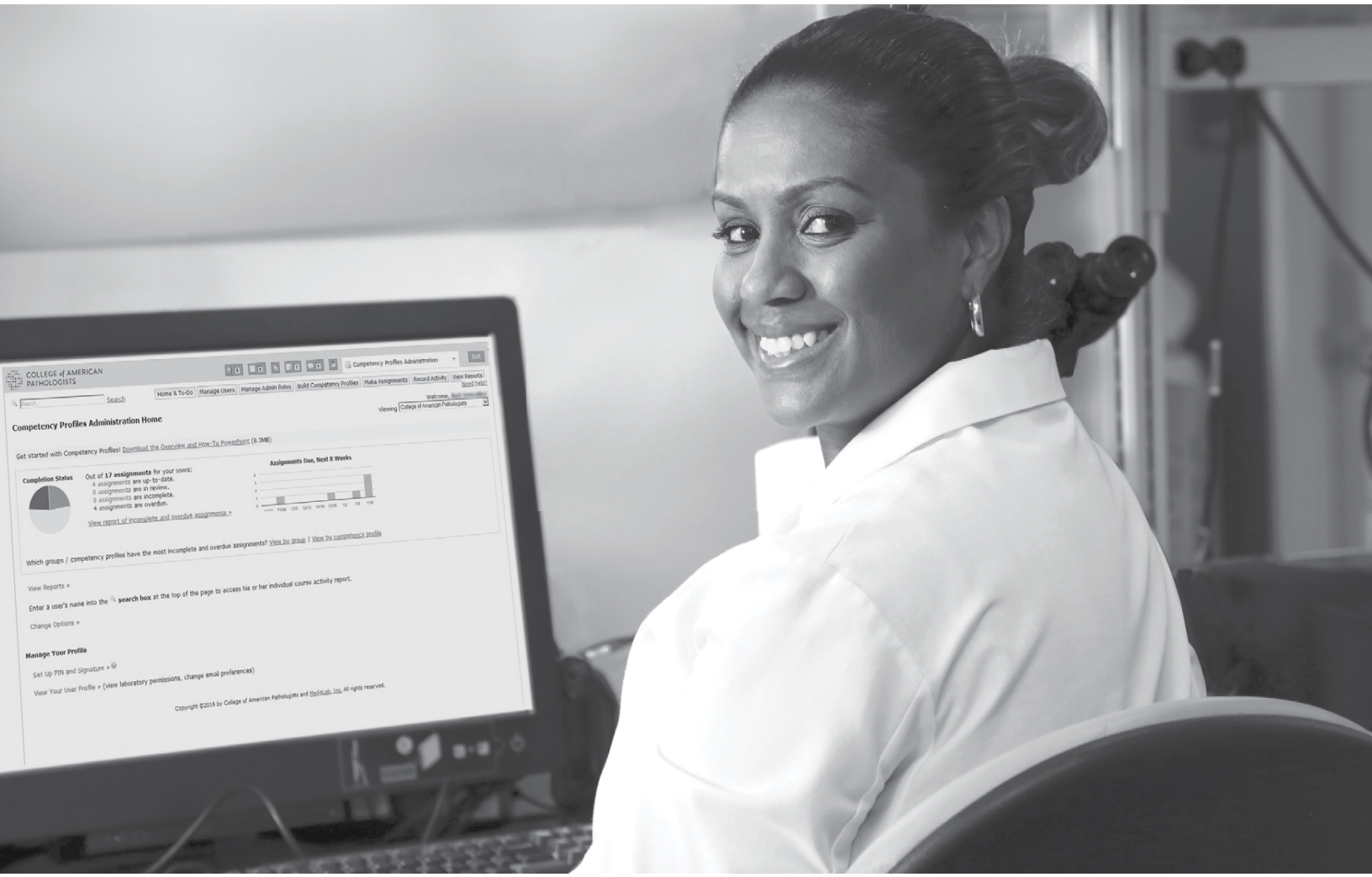
On a monthly basis, participants will record the number of true-positive, false-positive, and false-negative cytology-biopsy correlations. The false-negative correlations will be classified into four error categories: screening errors, interpretive errors, screening and interpretive errors, and adequacy determination errors. Participants will also record the biopsy diagnoses for Pap tests with an interpretation of atypical squamous cells (ASC-US and ASC-H) or atypical glandular cells (AGC). This monitor includes cervical biopsy specimens submitted to the laboratory that have a corresponding satisfactory or satisfactory but limited Pap test within three months of the biopsy.

Performance Indicators

- Predictive value of positive cytology (%)
- Sensitivity (%)
- Screening/interpretation sensitivity (%)
- Sampling sensitivity (%)
- Percent positive for ASC-US interpretations
- Percent positive for ASC-H interpretations
- Percent positive for AGC interpretations

Look for your input forms approximately three weeks prior to the quarter.

If it's not documented, it's not compliant. Period.



Documenting the competency assessment of your staff is the #1 deficiency cited by major laboratory accreditors. It's true—one in four laboratories does not fully meet the documentation requirements of competency assessment.

You may know that your team follows all regulatory requirements to the letter. But when inspection time comes—if it's not documented, it's considered a deficiency. With the Competency Assessment Program you can align your competency assessment plan with the quality assurance processes you already perform regularly.

Improve your laboratory's readiness for inspection. Add the appropriate Competency Assessment Program subscription to your order form.

4 Quality Cross Check

Simplify biannual instrument comparability studies with Quality Cross Check.

- Receive custom reports with peer group evaluations and instrument comparability statistics.
- Monitor transfusion medicine performance and assess comparability across multiple automated and manual methods with the new Quality Cross Check—Transfusion Medicine program (JATQ).

New Programs NEW

Discontinued Programs

Quality Cross Check—Reticulocyte (RT2Q)

Perform instrument comparability and stay in compliance

Quality Cross Check is a convenient solution to monitor instrument performance and assess comparability across multiple instruments in your laboratory and to identify potential issues before they affect patient results.

How It Works

- Receive three challenges in each of two mailings a year.
- Report up to three instruments for each challenge (and report up to 30 instruments for Quality Cross Check—Whole Blood Glucose).
- Receive a custom report package that includes peer group comparison and instrument comparability statistics for each reported analyte.

Stay in Compliance

In August 2015, the Centers for Medicare & Medicaid Services (CMS) reiterated that laboratories are not permitted to test proficiency testing samples on multiple instruments unless that is how the laboratory tests patient specimens.

The CMS interpretation was expanded beyond regulated analytes to include analytes not listed in Subpart I of the Clinical Laboratory Improvement Amendments regulations, including waived methods.

Quality Cross Check complements your existing CAP Surveys to monitor multiple instrument performance and is compliant with the CMS directive.

Monitoring Performance of Glucose Meters

Beginning in 2017, PT for waived whole blood glucose on glucose meters was no longer required for laboratories accredited by the CAP. Laboratories are required to perform alternative performance assessment.

In response to this change, the CAP introduced the Quality Cross Check—Whole Blood Glucose program (WBGQ). Participants in this program will enjoy the benefits of Quality Cross Check and have the ability to report up to 30 instruments for each challenge.

General Chemistry and Therapeutic Drug Monitoring

Quality Cross Check—Chemistry and Therapeutic Drug Monitoring CZQ

Analyte	Program Code	Challenges per Shipment
	CZQ	
See Survey CZ analytes on pages 56-58	▮	3

This program does not meet regulatory requirements for proficiency testing; see Survey CZ on pages 56-58. For additional information about the Quality Cross Check program, see page 40.

Program Information

- Three 5.0-mL liquid serum specimens in duplicate
- Report up to three instruments
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

Quality Cross Check—BNP BNPQ

Analyte	Program Code	Challenges per Shipment
	BNPQ	
BNP	▮	3
NT-proBNP	▮	3

This program does not meet regulatory requirements for proficiency testing; see Survey BNP or BNP5 on page 61. For additional information about the Quality Cross Check program, see page 40.

Program Information

- Three 1.5-mL liquid specimens
- Report up to three instruments
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

Quality Cross Check—Whole Blood Glucose WBGQ

Analyte	Program Code	Challenges per Shipment
	WBGQ	
Glucose	▮	3

The CAP Accreditation Program requires all accredited laboratories performing waived whole blood glucose testing using glucose meters to perform alternative performance assessment. This program can be used to meet alternative performance assessment requirements.

Program Information

- Three 2.0-mL whole blood specimens
- Report up to 30 instruments
- Two shipments per year

CE credit

Quality Cross Check—Body Fluid Chemistry FLDQ

Analyte	Program Code	Challenges per Shipment
	FLDQ	
Albumin	▮	3
Amylase	▮	3
CA19-9	▮	1
Carcinoembryonic antigen (CEA)	▮	1
Cholesterol	▮	3
Creatinine	▮	3
Glucose	▮	3
Lactate	▮	3
Lactate dehydrogenase (LD)	▮	3
pH	▮	3
Protein, total	▮	3
Triglycerides	▮	3
Urea nitrogen	▮	1

This program does not meet regulatory requirements for proficiency testing; see Survey FLD on page 72. For additional information about the Quality Cross Check program, see page 40.

Program Information

- Three 3.0-mL simulated liquid body fluid specimens in duplicate
- Report up to three instruments
- Two shipments per year

Quality Cross Check—Hemoglobin A_{1c} GHQ

Analyte	Program Code	Challenges per Shipment
	GHQ	
Hemoglobin A_{1c}	▮	3

This program does not meet regulatory requirements for proficiency testing; see Survey GH5 on page 63. For additional information about the Quality Cross Check program, see page 40.

Program Information

- Three 0.8-mL previously frozen liquid specimens in triplicate
- Report up to three instruments
- Two shipments per year

Endocrinology

Quality Cross Check—Parathyroid Hormone PTHQ

Analyte	Program Code	Challenges per Shipment
	PTHQ	
Parathyroid hormone (PTH)	▮	3

This program does not meet regulatory requirements for proficiency testing; see Survey ING on page 86. For additional information about the Quality Cross Check program, see page 40.

Program Information

- Three 5.0-mL lyophilized serum specimens in duplicate
- Report up to three instruments
- Two shipments per year

Blood Gas, Critical Care, and Oximetry

Quality Cross Check—Blood Oximetry SOQ

Analyte	Program Code	Challenges per Shipment
	SOQ	
Carboxyhemoglobin	▮	3
Hematocrit, estimated	▮	3
Hemoglobin, total	▮	3
Methemoglobin	▮	3
Oxyhemoglobin	▮	3

This program does not meet regulatory requirements for proficency testing; see Survey SO on page 94. For additional information about the Quality Cross Check program, see page 40.

Program Information

- Three 1.2-mL liquid specimens in triplicate
- Report up to three instruments
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

Quality Cross Check—Blood Gas AQQ, AQ2Q, AQ3Q, AQ4Q

Analyte	Program Code				Challenges per Shipment
	AQQ	AQ2Q	AQ3Q	AQ4Q	
Calcium, ionized	▮	▮	▮	▮	3
Chloride	▮	▮	▮	▮	3
Hematocrit	▮	▮	▮	▮	3
Hemoglobin, estimated	▮	▮	▮	▮	3
Lactate	▮	▮	▮	▮	3
Magnesium, ionized	▮	▮			3
PCO_2	▮	▮	▮	▮	3
pH	▮	▮	▮	▮	3
PO_2	▮	▮	▮	▮	3
Potassium	▮	▮	▮	▮	3
Sodium	▮	▮	▮	▮	3
tCO_2	▮	▮	▮	▮	3
Creatinine		▮		▮	3
Glucose		▮		▮	3
Urea nitrogen (BUN)		▮		▮	3

These programs do not meet regulatory requirements for proficiency testing; see Surveys AQ and AQ2-AQ4 on page 92. For additional information about the Quality Cross Check program, see page 40.

Program Information

- AQQ, AQ2Q - Three 2.5-mL specimens in triplicate and three 2.5-mL specimens for hematocrit testing in triplicate; appropriate for all methods except i-STAT®
- AQ3Q, AQ4Q - Three 1.7-mL specimens in triplicate for i-STAT methods only
- Report up to three instruments
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

Hematology and Clinical Microscopy

Quality Cross Check—Hematology Series FH3Q, FH4Q, FH6Q, FH9Q

Analyte/Procedure	Program Code				Challenges per Shipment
	FH3Q	FH4Q	FH6Q	FH9Q	
Hematocrit	▮	▮	▮	▮	3
Hemoglobin	▮	▮	▮	▮	3
Immature granulocyte parameter				▮	3
Immature platelet function (IPF)%				▮	3
Large unstained cells (LUC)		▮			3
MCV, MCH, MCHC	▮	▮	▮	▮	3
MPV	▮	▮	▮	▮	3
Nucleated red blood cell count (nRBC)	▮			▮	3
Platelet count	▮	▮	▮	▮	3
RDW	▮	▮	▮	▮	3
Red blood cell count	▮	▮	▮	▮	3
WBC differential	▮	▮	▮	▮	3
White blood cell count	▮	▮	▮	▮	3

These programs do not meet regulatory requirements for proficiency testing; see the FH Series on page 136. For additional information about the Quality Cross Check program, see page 40.

Program Information

- Three 2.5-mL whole blood specimens with pierceable caps
- Report up to three instruments
- For method compatibility, see instrument matrix on page 139
- Two shipments per year

Quality Cross Check—Reticulocyte RTQ, RT3Q, RT4Q

Instrument/Method	Program Code			Challenges per Shipment
	RTQ	RT3Q	RT4Q	
Abbott Cell-Dyn 4000, Sapphire, Siemens ADVIA 120/2120, and all other automated and manual methods	▮			3
Coulter GenS, HmX, LH500, LH700 series, MAXM, STKS, Unicel DxH		▮		3
Sysmex XE-2100, XE-2100C, XE-2100D, XE-2100L, XE-5000, XN Series, XT-2000i, XT-4000i			▮	3

These programs do not meet regulatory requirements for proficiency testing; see the RT Series on page 142. For additional information about the Quality Cross Check program, see page 40.

Program Information

- RTQ - Three 1.0-mL stabilized red blood cell specimens
- RT3Q - Three 3.0-mL stabilized red blood cell specimens
- RT4Q - Three 2.0-mL stabilized red blood cell specimens
- Includes percentage and absolute result reporting
- Report up to three instruments
- Two shipments per year

Quality Cross Check—Urinalysis CMQ

Analyte	Program Code	Challenges per Shipment
	CMQ	
Bilirubin	▮	3
Blood or hemoglobin	▮	3
Glucose	▮	3
hCG urine, qualitative	▮	3
Ketones	▮	3
Leukocyte esterase	▮	3
Nitrite	▮	3
Osmolality	▮	3
pH	▮	3
Protein, qualitative	▮	3
Reducing substances	▮	3
Specific gravity	▮	3
Urobilinogen	▮	3

This program does not meet regulatory requirements for proficiency testing; see Surveys CMP and CMP1 on page 146. For additional information about the Quality Cross Check program, see page 40.

Program Information

- Three 10.0-mL liquid urine specimens for use with all instruments
- Report up to three instruments
- Two shipments per year

Quality Cross Check—Occult Blood OCBQ

Analyte	Program Code	Challenges per Shipment
	OCBQ	
Occult blood	▮	3

This program does not meet regulatory requirements for proficiency testing; see Survey OCB on page 151. For additional information about the Quality Cross Check program, see page 40.

Program Information

- Three 2.0-mL simulated fecal specimens
- Report up to three instruments
- Two shipments per year

Coagulation

Quality Cross Check—Coagulation CGLQ		
Analyte	**Program Code**	**Challenges per Shipment**
	CGLQ	
Activated partial thromboplastin time	▮	3
Fibrinogen	▮	3
International normalized ratio (INR)	▮	3
Prothrombin time	▮	3
D-dimer	▮	1
Fibrin(ogen) degradation products, plasma	▮	1
Fibrin(ogen) degradation products, serum	▮	1

This program does not meet regulatory requirements for proficiency testing; see Survey CGL on page 160. For additional information about the Quality Cross Check program, see page 40.

Program Information

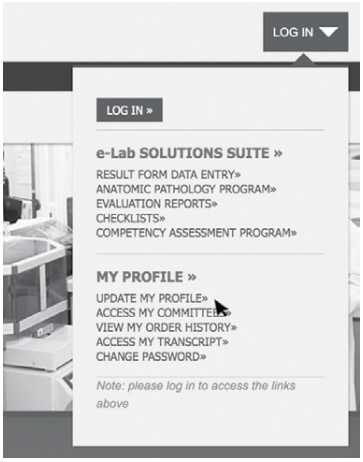
- Three 1.0-mL lyophilized plasma specimens in triplicate, one 1.0-mL plasma specimen, and one 2.0-mL serum specimen
- Report up to three instruments
- Two shipments per year

Have you created or updated your CAP Profile?

Each laboratory staff member should have their own profile. Your profile is transferrable when you leave your current position. Use it to maintain information about yourself, including:

- Business affiliations
- Certifications
- Contact preferences
- Inspector-related information
- Personal contact information
- Specialties and skills
- Addresses

To create or update your profile, visit cap.org, log in, and click on UPDATE MY PROFILE.



Quality Cross Check—Activated Clotting Time Series CTQ, CT1Q, CT2Q, CT3Q, CT5Q

Instrument/Cartridge	Program Code					Challenges per Shipment
	CTQ	CT1Q	CT2Q	CT3Q	CT5Q	
Helena Actalyke®	▮					3
Helena Cascade POC	▮					3
IL Gem® PCL ACT				▮		3
IL Gem PCL ACT-LR			▮			3
IL GEM PCL Plus ACT				▮		3
IL GEM PCL Plus ACT-LR			▮			3
ITC Hemochron® CA510/FTCA510	▮					3
ITC Hemochron FTK-ACT	▮					3
ITC Hemochron Jr. Signature/ACT+				▮		3
ITC Hemochron Jr. Signature/ACT-LR			▮			3
ITC Hemochron P214/P215	▮					3
i-STAT Celite® and Kaolin ACT					▮	3
Medtronic HemoTec ACT/ACTII/ACT Plus HR-ACT		▮				3
Medtronic HemoTec ACT/ACTII/ACT Plus LR-ACT		▮				3
Medtronic HemoTec ACT/ACTII/ACT Plus R-ACT		▮				3
Medtronic Hepcon HMS, HMS Plus		▮				3
Sienco Sonoclot®	▮					3

These programs do not meet regulatory requirements for proficiency testing; see Surveys CT-CT3 and CT5 on page 164. For additional information about the Quality Cross Check program, see page 40.

Program Information

- CTQ - Three 3.0-mL lyophilized whole blood specimens in triplicate with corresponding diluents
- CT1Q - Three 1.7-mL lyophilized whole blood specimens in triplicate with corresponding diluents
- CT2Q - Three 0.5-mL lyophilized whole blood/diluent ampules in triplicate
- CT3Q - Three 0.5-mL lyophilized whole blood/diluent ampules in triplicate
- CT5Q - Three 1.7-mL lyophilized whole blood specimens in triplicate with corresponding diluents
- Report up to three instruments
- Two shipments per year

Transfusion Medicine

NEW

Quality Cross Check—Transfusion Medicine JATQ

Procedure	Program Code	Challenges per Shipment
	JATQ	
ABO grouping	▮	3
Antibody detection	▮	3
Rh typing	▮	3

This program does not meet regulatory requirements for proficiency testing; see Survey JAT on page 219. For additional information about the Quality Cross Check program, see page 40.

Program Information

- Three 7.0-mL 13-17% whole blood specimens
- May be used with automated and manual procedures
- Two shipments per year

Make critical transfusion decisions with confidence

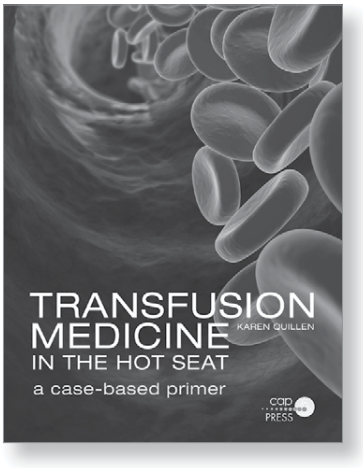
Transfusion Medicine in the Hot Seat is a valuable educational resource for pathology trainees and pathologists practicing transfusion medicine. The text presents a total of 26 realistic transfusion scenarios divided into three sections:

- Antibodies
- Blood Components
- Complications

The short-case format makes the information easily accessible and can serve as the basis for a transfusion medicine curriculum in clinical pathology.

Select Transfusion Medicine in the Hot Seat (PUB224) on your Surveys order form. Or, view sample pages and order online:

- printed books at estore.cap.org
- ebooks at ebooks.cap.org



Item number: PUB224
Softcover; 123 pages

So you're going to collect a blood specimen

Up to 70% of laboratory errors occur prior to sample analysis and testing. Ensure everyone on your team is equipped to procure a quality blood specimen with this modern update to the classic reference guide.

- Step-by-step instructions for venipuncture, skin puncture, and infant heelstick
- Best practices for collection, transporting, processing, and storage
- Procedures for blood smears, blood cultures, and neonatal screening
- Special considerations for the difficult venipuncture
- Four ways to inspire confidence in your patient

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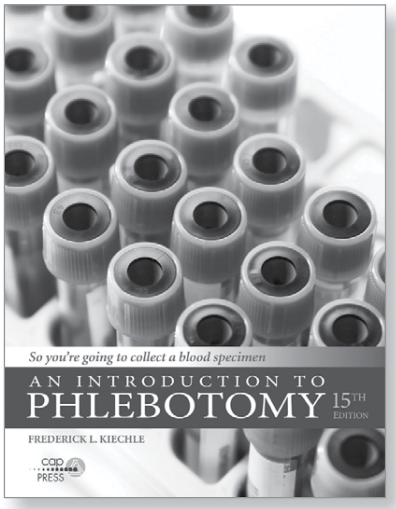


Item number: PUB225
Spiral bound; 84 pages;
30+ images and tables; 2017

5 Point-of-Care Programs

Keep your point-of-care (POC) instruments and staff operating at peak performance.

- Improve waived test results with POC Competency Challenges that evaluate instrument and method performance, troubleshoot issues, assess staff competency, and provide training information.
- Gain insights with the Point-of-Care Testing Toolkit, an ebook resource for all members of the team.

Point-of-Care Programs

POC Competency Challenges are designed to improve waived test results. These programs evaluate instrument and method performance, troubleshoot, assess staff competency, and provide information to train staff. Expected results will be provided. These programs are not proficiency testing programs and participants will not return results to the CAP.

POC Competency Challenges may have limited availability and stability.

POC Competency Challenges POC1, POC2, POC3, POC4

Program Name	Program Code				Challenges per Shipment
	POC1	POC2	POC3	POC4	
hCG Competency	▮				10
Glucose Competency		▮			10
Urine Dipstick Competency			▮		10
Strep Screen Competency				▮	10

Program Information

- POC1 - One positive 10.0-mL liquid urine specimen
- POC2 - One abnormal 2.0-mL whole blood specimen
- POC3 - One abnormal 10.0-mL liquid urine specimen
- POC4 - One 1.0-mL positive liquid specimen
- Each program provides material to test up to 10 staff
- Shipments available upon request

POC Competency Challenges POC6, POC7, POC8, POC9

Program Name	Program Code				Challenges per Shipment
	POC6	POC7	POC8	POC9	
PT/INR, CoaguChek XS Plus and XS Pro Competency	▮				10
Waived Chemistry, Glucose and HgB Competency		▮			10
Influenza A/B Antigen Detection Competency			▮		10
Fecal Occult Blood Competency				▮	10

Program Information

- POC6 - One abnormal 0.3-mL lyophilized plasma specimen (five vials) and five corresponding diluents
- POC7 - One abnormal 2.5-mL whole blood specimen compatible with the HemoCue® B, HemoCue 201, and Stanbio HemoPoint® H2 instruments
- POC8 - One 1.5-mL positive liquid specimen for influenza A; one 1.5-mL positive liquid specimen for influenza B
- POC9 - One positive 2.0-mL fecal specimen
- Each program provides material to test up to 10 staff
- Shipments available upon request

POC Competency Challenges POC10, POC11, POC12

Program Name	Program Code			Challenges per Shipment
	POC10	POC11	POC12	
Blood Gases Competency	▮			10
Blood Gases, i-STAT® Competency		▮		10
Plasma Cardiac Markers Competency			▮	10

Program Information

- POC10 - One abnormal 2.5-mL aqueous blood gas specimen (10 vials) and one 2.5-mL hematocrit/ hemoglobin specimen (10 vials)
- POC11 - One abnormal 2.5-mL aqueous specimen (10 vials) for blood gas and hematocrit/hemoglobin testing
- POC12 - One 1.5-mL plasma specimen (two vials); compatible with plasma-based tests, such as Alere Triage® and i-STAT instruments
- Programs provide material to test up to 10 staff
- Shipments available upon request

Guide your point-of-care testing with confidence

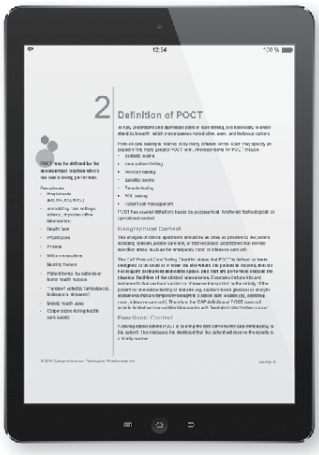
Point-of-Care Testing (POCT) Toolkit

POCT implementation requires a systematic approach that involves all stakeholders. This toolkit serves as a resource for any member of the POCT team who wants to learn about POCT or who has responsibility to guide or direct POCT. Pathologists may also use the toolkit to guide other members of their POCT teams, including POCT coordinators and medical technologists who are involved in POCT.

The toolkit covers:

- POCT advantages and disadvantages
- Current and projected technology
- Pathologist, laboratory director, and POCT coordinator roles in POCT
- Selection of appropriate test methods
- Validation and verification protocols
- Quality control and data management
- Patient safety
- POCT training and competency

Purchase the ebook at ebooks.cap.org.



POC Competency Challenges POC14, POC15, POC16

Program Name	Program Code			Challenges per Shipment
	POC14	POC15	POC16	
Medtronic ACT/ACT, i-STAT Competency	▮			5
Hemochron Jr IL GEM PCL ACT-LR Competency		▮		5
Hemochron Jr Signature IL GEM PCL ACT Competency			▮	5

Program Information

- POC14 - Five abnormal 1.7-mL lyophilized whole blood specimens with five corresponding diluents and one calcium chloride diluent vial; compatible with Medtronic HemoTect ACT/ACTII/ACT Plus, Medtronic Hepcon HMS/HMS Plus, and i-STAT Celine and Kaolin ACT
- POC15 - Five abnormal 0.5-mL lyophilized whole blood/diluent ampules; compatible with IL GEM PCL Plus ACT-LR and ITC Hemochron Jr./Signature ACT-LR
- POC16 - Five abnormal 0.5-mL lyophilized whole blood/diluent ampules; compatible with IL GEM PCL Plus ACT and ITC Hemochron Jr./Signature ACT+
- Programs provide material to test up to five staff
- Shipments available upon request

We are here to help. Fast Focus on Compliance—the inspector's quick guide

A resource for laboratories and inspectors alike, our Fast Focus on Compliance mini-training vignettes help you prepare for future laboratory inspections by gaining a clear understanding of the requirements and receiving insight into areas that need improvement:

- Inspecting Method Validation/Verification Studies
- Inspecting Personnel Records
- 12 Inspector Tools to Make Your Inspection Go More Smoothly
- Proficiency Testing Referral and Communications
- Competency Assessment
- Documenting Your Inspection Findings

Access these concentrated topics online by searching *Fast Focus on Compliance* at cap.org

6 General Chemistry and Therapeutic Drug Monitoring

Standardize hemoglobin A_{1C} testing with our GH2/GH5 programs.

- Mimic patient testing using specimens from human donors with levels that reflect clinical decision points.
- Ensure accuracy with results evaluated against National Glycohemoglobin Standardization Program (NGSP) reference method targets.

General Chemistry and Therapeutic Drug Monitoring

New Programs NEW

General Chemistry and Therapeutic Drug Monitoring

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

General Chemistry and Therapeutic Drugs C1, C3/C3X, C4, CZ/CZX/CZ2X, Z

Analyte	Program Code					Challenges per Shipment
	C1	C3/C3X	C4	CZ/CZX/ CZ2X	Z	
Alanine aminotransferase (ALT/SGPT)	▮	▮		▮		5
Albumin	▮	▮		▮		5
Alkaline phosphatase	▮	▮		▮		5
Amylase	▮	▮		▮		5
Aspartate aminotransferase (AST/SGOT)	▮	▮		▮		5
Bilirubin, direct	▮	▮	▮	▮		5
Bilirubin, total*	▮	▮	▮	▮		5
Calcium	▮	▮	▮	▮		5
Chloride	▮	▮	▮	▮		5
Cholesterol, total	▮	▮	▮	▮		5
Cortisol	▮	▮		▮		5
Creatine kinase (CK)	▮	▮		▮		5
Creatinine	▮	▮	▮	▮		5
Glucose	▮	▮	▮	▮		5
HDL cholesterol	▮	▮	▮	▮		5
Human chorionic gonadotropin (hCG), quantitative	▮	▮	▮	▮		5
Iron	▮	▮		▮		5
Lactate dehydrogenase (LD)	▮	▮		▮		5
LDL cholesterol, measured	▮	▮	▮	▮		5
Lipoprotein (a)	▮	▮		▮		5
Magnesium	▮	▮		▮		5
Pancreatic amylase	▮	▮		▮		5
Potassium	▮	▮	▮	▮		5
Protein, total	▮	▮		▮		5
Sodium	▮	▮	▮	▮		5
T3, free (triiodothyronine, free)	▮	▮		▮		5
T3, total (triiodothyronine, total)	▮	▮		▮		5
T3, uptake and related tests	▮	▮		▮		5

Continued on the next page

*General Chemistry and Therapeutic Drugs Surveys do not fulfill the CAP accreditation requirements for neonatal bilirubin proficiency testing. See Surveys NB, NB2 on page 65.

Program Information

- C1, C3, C4, CZ, Z - Five 5.0-mL liquid serum specimens
- C3X, CZX - Five 5.0-mL liquid serum specimens in duplicate
- CZ2X - Five 5.0-mL liquid serum specimens in triplicate
- Conventional and International System of Units (SI) reporting offered
- Three shipments per year
- For second instrument reporting options, see the Quality Cross Check program, CZQ, on page 59

CE credit

General Chemistry and Therapeutic Drugs
C1, C3/C3X, C4, CZ/CZX/CZ2X, Z continued

Analyte	Program Code					Challenges per Shipment
	C1	C3/C3X	C4	CZ/CZX/ CZ2X	Z	
T4, free (thyroxine, free)	▮	▮		▮		5
T4, total (thyroxine, total)	▮	▮		▮		5
Thyroid-stimulating hormone (TSH)	▮	▮		▮		5
Triglycerides	▮	▮	▮	▮		5
Urea nitrogen (BUN)	▮	▮	▮	▮		5
Uric acid	▮	▮	▮	▮		5
Acid phosphatase		▮		▮		5
Ammonia		▮		▮		5
Apolipoprotein A1		▮		▮		5
Apolipoprotein B		▮		▮		5
Calcium, ionized		▮		▮		5
Carbon dioxide (CO_2)	▮	▮	▮	▮		5
Ferritin		▮		▮		5
Gamma glutamyl transferase (GGT)	▮	▮		▮		5
Iron binding capacity, total (measured)		▮		▮		5
Iron binding capacity, unsaturated (measured)		▮		▮		5
Lactate		▮		▮		5
Lipase		▮		▮		5
Osmolality		▮		▮		5
Phosphorus (inorganic)	▮	▮		▮		5
Prealbumin		▮		▮		5
Transferrin		▮		▮		5
Lithium	▮	▮		▮	▮	5
Acetaminophen				▮	▮	5
Amikacin				▮	▮	5
Caffeine				▮	▮	5
Carbamazepine				▮	▮	5
Carbamazepine, free				▮	▮	5
Digoxin				▮	▮	5
Digoxin, free				▮	▮	5
Disopyramide				▮	▮	5

Continued on the next page

Program Information

- C1, C3, C4, CZ, Z - Five 5.0-mL liquid serum specimens
- C3X, CZX - Five 5.0-mL liquid serum specimens in duplicate
- CZ2X - Five 5.0-mL liquid serum specimens in triplicate
- Conventional and International System of Units (SI) reporting offered
- Three shipments per year
- For second instrument reporting options, see the Quality Cross Check program, CZQ, on page 59

CE credit

General Chemistry and Therapeutic Drugs
C1, C3/C3X, C4, CZ/CZX/CZ2X, Z continued

Analyte	Program Code					Challenges per Shipment
	C1	C3/C3X	C4	CZ/CZX/ CZ2X	Z	
Ethosuximide				▮	▮	5
Gentamicin				▮	▮	5
Lidocaine				▮	▮	5
Methotrexate				▮	▮	5
N-acetylprocainamide (NAPA)				▮	▮	5
Phenobarbital				▮	▮	5
Phenytoin				▮	▮	5
Phenytoin, free				▮	▮	5
Primidone				▮	▮	5
Procainamide				▮	▮	5
Quinidine				▮	▮	5
Salicylate				▮	▮	5
Theophylline				▮	▮	5
Tobramycin				▮	▮	5
Valproic acid				▮	▮	5
Valproic acid, free				▮	▮	5
Vancomycin				▮	▮	5

Program Information

- C1, C3, C4, CZ, Z - Five 5.0-mL liquid serum specimens
- C3X, CZX - Five 5.0-mL liquid serum specimens in duplicate
- CZ2X - Five 5.0-mL liquid serum specimens in triplicate
- Conventional and International System of Units (SI) reporting offered
- Three shipments per year
- For second instrument reporting options, see the Quality Cross Check program, CZQ, on page 59

CE credit

The CAP is your trusted calibration verification and linearity partner, providing you with the most comprehensive menu of programs.

- **Large peer groups**—Maximize confidence in your calibration verification results.
- **Customized report package**—Let our team of biostatisticians perform the statistical analysis of your results so you do not have to.
- **Rapid result turnaround**—View your linearity evaluation for most CVL programs within two business days.

See the Instrumentation Validation Tools section of this catalog to determine programs that best fit your laboratory's CVL needs.

Quality Cross Check—Chemistry and Therapeutic Drug Monitoring CZQ

Analyte	Program Code	Challenges per Shipment
	CZQ	
See Survey CZ analytes on pages 56-58	▮	3

This program does not meet regulatory requirements for proficiency testing; see Survey CZ on pages 56-58. For additional information about the Quality Cross Check program, see page 40.

The Quality Cross Check Program:

- Provides a solution for monitoring performance across multiple instruments, and is in compliance with the CMS directive regarding proficiency testing on multiple instruments.
- Simplifies instrument comparability efforts by providing custom reports with both peer group comparison and instrument comparability statistics.

Program Information

- Three 5.0-mL liquid serum specimens in duplicate
- Report up to three instruments
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

CAP/AACC Immunosuppressive Drugs CS

Analyte	Program Code	Challenges per Shipment
	CS	
Cyclosporine	▮	3
Sirolimus (rapamycin)	▮	3
Tacrolimus	▮	3

Program Information

- Three 5.0-mL whole blood specimens
- For laboratories monitoring cyclosporine, sirolimus, and tacrolimus in transplant patients
- Two shipments per year

AACC

Antifungal Drugs Monitoring AFD

NEW

Procedure	Program Code	Challenges per Shipment
	AFD	
Fluconazole	▮	3
Itraconazole	▮	3
Posaconazole	▮	3
Voriconazole	▮	3

Program Information

- Three 5.0-mL serum specimens
- For laboratories performing quantitative analysis of anti-fungal agents
- Two shipments per year

Everolimus EV

Analyte	Program Code	Challenges per Shipment
	EV	
Everolimus	▮	3

Program Information
- Three 4.0-mL whole blood specimens
- Two shipments per year

Mycophenolic Acid MPA

Analyte	Program Code	Challenges per Shipment
	MPA	
Mycophenolic acid	▮	3

Program Information
- Three 5.0-mL lyophilized serum specimens
- Two shipments per year

Therapeutic Drug Monitoring—Extended ZE

Analyte	Program Code	Challenges per Shipment
	ZE	
Clozapine	▮	3
Gabapentin	▮	3
Lacosamide	▮	3
Lamotrigine	▮	3
Levetiracetam	▮	3
Oxcarbazepine metabolite	▮	3
Pregabalin	▮	3
Rufinamide	▮	3
Teriflunomide	▮	3
Topiramate	▮	3
Zonisamide	▮	3

Program Information
- Three 5.0-mL serum specimens
- Two shipments per year

Therapeutic Drug Monitoring—Special ZT

Analyte	Program Code	Challenges per Shipment
	ZT	
Amitriptyline	▮	3
Desipramine	▮	3
Imipramine	▮	3
Nortriptyline	▮	3
Tricyclics, total (qualitative/ quantitative)	▮	3

Program Information
- Three 5.0-mL lyophilized serum specimens
- Two shipments per year

Accuracy-Based Lipids ABL

Analyte	Program Code	Challenges per Shipment
	ABL	
Apolipoprotein A1*	▮	3
Apolipoprotein B*	▮	3
Cholesterol*	▮	3
HDL cholesterol*	▮	3
Non-HDL cholesterol	▮	3
LDL cholesterol	▮	3
Lipoprotein (a)	▮	3
Triglycerides*	▮	3

*This analyte will be evaluated against the reference method.

Program Information

- Three 1.0-mL human serum specimens
- Two shipments per year

B-Type Natriuretic Peptides BNP, BNP5

Analyte	Challenges per Shipment	
	Program Code	
	BNP	BNP5
BNP	2	5
NT-proBNP	2	5

Additional Information

- The College of American Pathologists Accreditation Program requires all accredited laboratories performing non-waived testing for BNP and NT-proBNP to complete 15 PT challenges per year.
- For i-STAT®, use Plasma Cardiac Markers programs PCARM or PCARMX.
- For second instrument reporting options, see the Quality Cross Check program, BNPQ, below.

Program Information

- BNP - Two 1.0-mL liquid plasma specimens
- Conventional and International System of Units (SI) reporting offered; two shipments per year
- BNP5 - Five 1.0-mL liquid plasma specimens
- Conventional and International System of Units (SI) reporting offered; three shipments per year

Quality Cross Check—BNP BNPQ

Analyte	Program Code	Challenges per Shipment
	BNPQ	
BNP	▮	3
NT-proBNP	▮	3

This program does not meet regulatory requirements for proficiency testing; see Survey BNP or BNP5 above. For additional information about the Quality Cross Check program, see page 40.

The Quality Cross Check Program:

- Provides a solution for monitoring performance across multiple instruments, and is in compliance with the CMS directive regarding proficiency testing on multiple instruments.
- Simplifies instrument comparability efforts by providing custom reports with both peer group comparison and instrument comparability statistics.

Program Information

- Three 1.5-mL liquid specimens
- Report up to three instruments
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

Harmonized Thyroid ABTH

Analyte	Program Code	Challenges per Shipment
	ABTH	
T3, free (triiodothyronine, free)	▮	3
T3, total (triiodothyronine, total)	▮	3
T4, free (thyroxine, free)	▮	3
T4, total (thyroxine, total)	▮	3
Thyroid-stimulating hormone (TSH)	▮	3

Program Information

- Three 1.0-mL frozen human specimens
- Two shipments per year

Additional Information

- Analytes will be evaluated using harmonization.
- Specimens are collected by a modified application of Clinical Laboratory and Standards Institute Guideline CLSI C37-A, *Preparation and Validation of Commutable Frozen Human Serum Pools as Secondary Reference Materials for Cholesterol Measurement Procedures; Approved Guideline.*

Cardiac Markers CRT, CRTI, TNT, TNT5

Analyte	Program Code				Challenges per Shipment
	CRT	CRTI	TNT	TNT5	
CK-MB, immunochemical	▮	▮			5
CK isoenzymes (CK-BB, **CK-MB**, CK-MM), electrophoretic		▮			5
LD1, LD2, LD3, LD4, LD5, electrophoretic		▮			5
LD1/LD2 ratio calculation and interpretation		▮			5
Myoglobin	▮	▮			2
Troponin I	▮	▮			5
Troponin T, two challenges			▮		2
Troponin T, five challenges				▮	5

Program Information

- CRT - Five 2.0-mL liquid serum specimens
- CRTI - Ten 2.0-mL liquid serum specimens
- TNT - Two 2.0-mL liquid serum specimens
- TNT5 - Five 2.0-mL liquid serum specimens
- Three shipments per year

The College of American Pathologists Accreditation Program requires all accredited laboratories performing non-waived testing for Troponin I and Troponin T to complete 15 PT challenges per year.

Hemoglobin A_{1c} GH2, GH5

Analyte	Challenges per Shipment	
	Program Code	
	GH2	GH5
Hemoglobin A_{1c}	3	5

Additional Information

- These Surveys will be evaluated against the National Glycohemoglobin Standardization Program (NGSP) reference method.
- The College of American Pathologists Accreditation Program requires all accredited laboratories performing non-waived testing for Hemoglobin A_{1c} to complete 15 PT challenges per year.
- For second instrument reporting options, see the Quality Cross Check program, GHQ, below.

Program Information

- GH2 - Three 0.8-mL liquid human whole blood specimens; two shipments per year
- GH5 - Five 0.8-mL liquid human whole blood specimens; three shipments per year

NEW

Accuracy-Based Glucose, Insulin, and C-Peptide ABGIC

Analyte	Program Code	Challenges per Shipment
	ABGIC	
C-peptide	▮	3
Glucose	▮	3
Insulin	▮	3

Program Information

- Three 1.0-mL serum specimens
- Two shipments per year

Quality Cross Check—Hemoglobin A_{1c} GHQ

Analyte	Program Code	Challenges per Shipment
	GHQ	
Hemoglobin A_{1c}	▮	3

This program does not meet regulatory requirements for proficiency testing; see Survey GH5, above. For additional information about the Quality Cross Check program, see page 40.

The Quality Cross Check Program:

- Provides a solution for monitoring performance across multiple instruments, and is in compliance with the CMS directive regarding proficiency testing on multiple instruments.
- Simplifies instrument comparability efforts by providing custom reports with both peer group comparison and instrument comparability statistics.

Program Information

- Three 0.8-mL previously frozen liquid specimens in triplicate
- Report up to three instruments
- Two shipments per year

Hemoglobin A_{1c} GH5I

Analyte	Program Code	Challenges per Shipment
	GH5I	
Hemoglobin A_{1c}	▮	5

Additional Information

- This program meets the CAP's Accreditation Program requirements for proficiency testing.
- This Survey will not be evaluated against the National Glycohemoglobin Standardization Program (NGSP) reference method. See Survey GH5 to be evaluated against the NGSP reference method.

Program Information

- Five 0.5-mL lyophilized specimens with a 3.0-mL dropper-tipped vial of diluent
- Designed for international laboratories that have experienced significant shipping and receiving issues and require longer specimen stability
- Three shipments per year

Glycated Serum Albumin GSA

Analyte	Program Code	Challenges per Shipment
	GSA	
Glycated serum albumin	▮	3

Program Information

- Three 1.0-mL liquid serum specimens
- Two shipments per year

High-Sensitivity C-Reactive Protein HSCRP

Analyte	Program Code	Challenges per Shipment
	HSCRP	
High-sensitivity C-reactive protein	▮	3

Program Information

- Three 0.5-mL liquid serum specimens
- Two shipments per year

Homocysteine HMS

Analyte	Program Code	Challenges per Shipment
	HMS	
Homocysteine	▮	3

Program Information

- Three 1.0-mL serum specimens
- Two shipments per year

Ketones KET

Analyte	Program Code	Challenges per Shipment
	KET	
Beta-hydroxybutyrate	▮	2
Total ketones	▮	2

Program Information

- Two 2.0-mL serum specimens
- For use with Acetest® and other qualitative/semi-quantitative methods using the nitroprusside reaction for total ketones testing
- Two shipments per year

Chemistry—Limited, Waived LCW

Analyte	Program Code	Challenges per Shipment
	LCW	
Cholesterol	▮	3
Glucose	▮	3
HDL cholesterol	▮	3
LDL cholesterol	▮	3
Triglycerides	▮	3

Program Information

- Three 3.0-mL liquid serum specimens
- For use with waived methods such as the Cholestech LDX® and Roche ACCU-CHEK® Instant Plus
- The glucose specimens are not appropriate for use on other whole blood glucose meters
- Two shipments per year

Neonatal Bilirubin NB, NB2

Analyte	Challenges per Shipment	
	Program Code	
	NB	NB2
Bilirubin, direct	2	2
Bilirubin, total	5	2

One human-based serum specimen will offer the value assigned using the reference method procedure (*Clin Chem.* 1985;31:1779-1789).

Program Information

- NB - Five 1.0-mL human serum specimens; three shipments per year
- NB2 - Two 1.0-mL human serum specimens; must order in conjunction with a five-challenge total bilirubin proficiency testing program to meet regulatory requirements; two shipments per year
- Conventional and International System of Units (SI) reporting offered

Plasma Cardiac Markers PCARM, PCARMX, PCARI

Analyte	Program Code			Challenges per Shipment
	PCARM	PCARMX	PCARI NEW	
BNP	▮	▮	▮	5
CK-MB	▮	▮	▮	5
D-dimer	▮	▮		2
Myoglobin	▮	▮		2
Troponin I	▮	▮	▮	5

The College of American Pathologists Accreditation Program requires all accredited laboratories performing non-waived testing for BNP and Troponin I to complete 15 PT challenges per year.

Program Information

- PCARM - Five 1.5-mL liquid EDTA plasma specimens for point-of-care instruments such as Quidel Triage Cardiac (CardiacHS, D-dimer, BNP, and SOB) and i-STAT
- PCARMX - All Survey PCARM specimens in duplicate
- PCARI - Five 0.25-mL liquid plasma specimens for use with Quidel Triage Cardio (Cardio2/3 and Troponin I)
- Three shipments per year

Whole Blood Chemistry Compatibility Matrix

Whole Blood Analyzer/Method	Analyte	Compatible Survey Programs	Page
Hemocue®	Glucose	HCC	66
Roche Reflotron®	Cholesterol	C1, C4	56-57
	Glucose		56-57
Cholestech LDX®	Total cholesterol	LCW	65
	HDL cholesterol		65
	Triglycerides		65
	Glucose		65
Whole blood cholesterol meters	Cholesterol	C1, C4, LCW	56-57, 64
Whole blood glucose meters	Glucose	HCC2, WBGQ	66, 67
Nova StatSensor®/ E-Z-EM EZ Chem™	Creatinine	WBCR	66

Waived Combination HCC, HCC2

Analyte	Program Code		Challenges per Shipment
	HCC	HCC2	
Hematocrit		▮	2
Hemoglobin	▮	▮	2
Urinalysis/urine hCG		▮	2
Whole blood glucose	▮	▮	2 (HCC)/3 (HCC2)

Program Information

- HCC - Two 1.0-mL whole blood specimens; two shipments per year
- HCC2 - Total of four shipments per year
- Hematocrit, hemoglobin, and urinalysis/urine hCG testing - Two 3.0-mL whole blood specimens and two 10.0-mL urine specimens; two shipments per year: A and C
- Whole blood glucose testing - Three 2.5-mL whole blood specimens; two shipments per year: B and D
- To verify instrument compatibility, refer to the instrument matrix on this page

Whole Blood Creatinine WBCR

Analyte	Program Code	Challenges per Shipment
	WBCR	
Creatinine	▮	5

Program Information

- Five 4.0-mL whole blood specimens
- For use with the Nova StatSensor®/E-Z-EM EX Chem™
- Three shipments per year

Quality Cross Check—Whole Blood Glucose WBGQ

Analyte	Program Code	Challenges per Shipment
	WBGQ	
Glucose	▮	3

The CAP Accreditation Program requires all accredited laboratories performing waived whole blood glucose testing using glucose meters to perform alternative performance assessment. This program can be used to meet alternative performance assessment requirements.

The Quality Cross Check Program:

- Provides a solution for monitoring performance across multiple instruments, and is in compliance with the CMS directive regarding proficiency testing on multiple instruments.
- Simplifies instrument comparability efforts by providing custom reports with both peer group comparison and instrument comparability statistics.

Program Information

- Three 2.0-mL whole blood specimens
- Report up to 30 instruments
- Two shipments per year

CE credit

Improve the reliability of your patient results with CAP Survey Validated Materials

Use the same material that is sent in the Surveys program to:

- Identify and troubleshoot instrument/method problems
- Correlate results with other laboratories or instruments
- Document correction of problems identified in Surveys
- Utilize material with confirmed results as an alternative external quality control
- Identify potential proficiency testing failures

Each laboratory receives a Survey Participant Summary, which includes readily available results.

Chemistry/TDM, Validated Material

Validated Material	Program Code	Corresponding Survey	Pages
Chemistry/TDM	CZVM	CZ	56-58

Program Information

- Five 5.0-mL liquid serum specimens

Have you created or updated your CAP Profile?

Each laboratory staff member should have their own profile. Your profile is transferrable when you leave your current position. Use it to maintain information about yourself, including:

- Business affiliations
- Certifications
- Contact preferences
- Inspector-related information
- Personal contact information
- Specialties and skills
- Addresses

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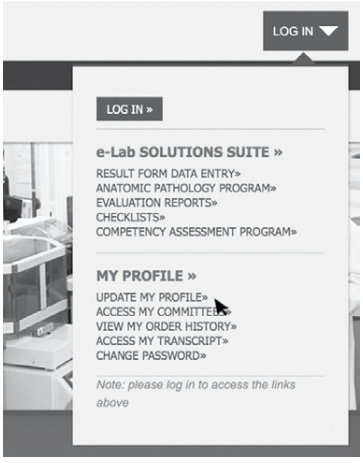

Urine Chemistry

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Urine Chemistry—General U

Analyte	Program Code	Challenges per Shipment
	U	
Amylase	▮	3
Calcium	▮	3
Chloride	▮	3
Creatinine	▮	3
Glucose	▮	3
Magnesium	▮	3
Nitrogen, total	▮	3
Osmolality	▮	3
Phosphorus	▮	3
Potassium	▮	3
Protein, total	▮	3
Sodium	▮	3
Urea nitrogen	▮	3
Uric acid	▮	3
Urine albumin, quantitative	▮	3
Urine albumin:creatinine ratio	▮	3

Program Information

- Six 15.0-mL urine specimens
- One mailing per year will include an additional educational specimen for uric acid testing for a total of seven challenges per year
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

Accuracy-Based Urine ABU

Analyte	Program Code	Challenges per Shipment
	ABU	
Calcium	▮	3
Creatinine	▮	3
Protein, total	▮	3
Urine albumin, quantitative	▮	3
Urine albumin: creatinine ratio	▮	3

Target values for albumin are obtained by LC-MS/MS after trypsin digestion, performed by the Renal Testing Laboratory, Mayo Clinic, Rochester, MN, using calibration materials prepared from human serum albumin (>99% pure).

Other analytes will be compared by peer group for harmonization purposes.

Program Information

- Three 5.0-mL human urine specimens
- Two shipments per year

Kidney Stone Risk Assessment KSA

Analyte	Program Code	Challenges per Shipment
	KSA	
Citrate	▮	3
Cystine	▮	3
Oxalate	▮	3
Sulfate	▮	3

Program Information
- Three 13.5-mL liquid urine specimens
- Two shipments per year

Urine Chemistry—Special N, NX

Analyte	Program Code	Challenges per Shipment
	N, NX	
3-methoxytyramines	▮	3
5-hydroxyindoleacetic acid	▮	3
17-hydroxycorticosteroids	▮	3
17-ketosteroids	▮	3
Aldosterone	▮	3
Coproporphyrins	▮	3
Cortisol, urinary free	▮	3
Dopamine	▮	3
Epinephrine	▮	3
Homovanillic acid	▮	3
Metanephrine	▮	3
Norepinephrine	▮	3
Normetanephrine	▮	3
Uroporphyrin	▮	3
Vanillylmandelic acid	▮	3

Program Information
- N - Six 10.0-mL lyophilized urine specimens and three 10.0-mL liquid urine specimens
- NX - All lyophilized Survey N specimens in duplicate and three 10.0-mL liquid urine specimens
- Two shipments per year

Myoglobin, Urine MYG

Analyte	Program Code	Challenges per Shipment
	MYG	
Myoglobin, urine, qualitative and quantitative	▮	2

Program Information
- Two 1.0-mL urine specimens
- Two shipments per year

Porphobilinogen, Urine UPBG		
Analyte	**Program Code**	**Challenges per Shipment**
	UPBG	
Porphobilinogen	▮	3

Program Information
- Three 5.0-mL urine specimens
- For use with qualitative and quantitative methods
- Two shipments per year

Improve the reliability of your patient results with CAP Survey Validated Materials

Use the same material that is sent in the Surveys program to:

- Identify and troubleshoot instrument/method problems
- Correlate results with other laboratories or instruments
- Document correction of problems identified in Surveys
- Utilize material with confirmed results as an alternative external quality control
- Identify potential proficiency testing failures

Each laboratory receives a Survey Participant Summary, which includes readily available results.

Urine Chemistry—General, Validated Material

Validated Material	Program Code	Corresponding Survey	Page
Urine Chemistry	UVM	U	68

Program Information
- Six 15.0-mL urine specimens

Urinalysis Benchtop Reference Guide (UABRG)

- Thirty-four different cell identifications, including common and rare cells
- Detailed descriptions for each cell morphology
- Eight tabbed sections for easy reference
  - Urinary Cells
  - Urinary Casts
  - Urinary Crystals
    - At Acid pH
    - At Neutral or Acid pH
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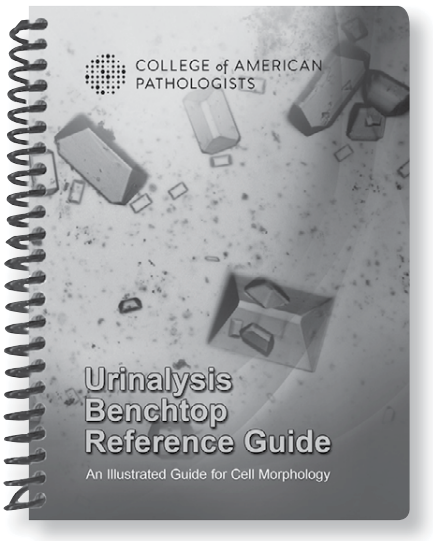

Item number: UABRG
Spiral bound; 38 pages; 34 images; 2014

Special Chemistry

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

1,5-Anhydroglucitol AG

Analyte	Program Code	Challenges per Shipment
	AG	
1,5-anhydroglucitol	▮	3

Program Information
- Three 1.0-mL liquid serum specimens
- Two shipments per year

Aldolase ADL

Analyte	Program Code	Challenges per Shipment
	ADL	
Aldolase	▮	2

Program Information
- Two 3.0-mL liquid serum specimens
- Two shipments per year

Angiotensin Converting Enzyme ACE

Analyte	Program Code	Challenges per Shipment
	ACE	
Angiotensin converting enzyme, quantitative	▮	2

Program Information
- Two 2.0-mL lyophilized serum specimens
- Two shipments per year

Body Fluids Benchtop Reference Guide (BFBRG)

- Thirty-six color images, including common and rare cells, crystals, and other cell inclusions
- Detailed descriptions of each cell including facts, cell morphology and inclusions
- Nine tabbed sections for easy reference
  - Erythroid Series
  - Lymphoid Series
  - Myeloid Series
  - Mononuclear Phagocytic Series
  - Lining Cells
  - Miscellaneous Cells
  - Crystals
  - Microorganisms
  - Miscellaneous Findings
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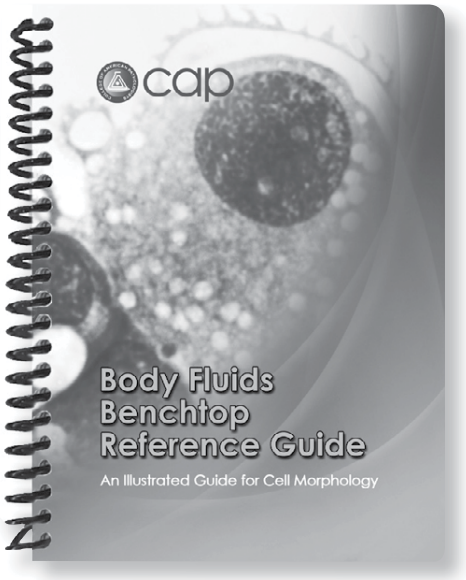

Item number: BFBRG
Spiral bound; 42 pages;
36 images; 2013

Body Fluid Chemistry FLD

Analyte	Program Code	Challenges per Shipment
	FLD	
Albumin	▮	3
Amylase	▮	3
CA19-9	▮	1
CEA	▮	1
Cholesterol	▮	3
Creatinine	▮	3
Glucose	▮	3
Lactate	▮	3
Lactate dehydrogenase (LD)	▮	3
pH	▮	3
Protein, total	▮	3
Triglycerides	▮	3
Urea nitrogen	▮	1 per year

Additional Information

- For second instrument reporting options, see the Quality Cross Check program, FLDQ, on page 73.

Program Information

- Three 3.0-mL simulated liquid body fluid specimens
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

Quality Cross Check—Body Fluid Chemistry FLDQ

Analyte	Program Code	Challenges per Shipment
	FLDQ	
Albumin	▮	3
Amylase	▮	3
CA19-9	▮	1
Carcinoembryonic antigen (CEA)	▮	1
Cholesterol	▮	3
Creatinine	▮	3
Glucose	▮	3
Lactate	▮	3
Lactate dehydrogenase (LD)	▮	3
pH	▮	3
Protein, total	▮	3
Triglycerides	▮	3
Urea nitrogen	▮	1

This program does not meet regulatory requirements for proficiency testing; see Survey FLD on page 72. For additional information about the Quality Cross Check program, see page 40.

The Quality Cross Check Program:

- Provides a solution for monitoring performance across multiple instruments, and is in compliance with the CMS directive regarding proficiency testing on multiple instruments.
- Simplifies instrument comparability efforts by providing custom reports with both peer group comparison and instrument comparability statistics.

Program Information

- Three 3.0-mL simulated liquid body fluid specimens in duplicate
- Report up to three instruments
- Two shipments per year

Body Fluid Chemistry 2 FLD2

Analyte	Program Code	Challenges per Shipment
	FLD2	
Alkaline phosphatase	▮	3
Bilirubin	▮	3
Calcium	▮	3
Chloride	▮	3
Lipase	▮	3
Potassium	▮	3
Sodium	▮	3
Uric acid	▮	3

Program Information

- Three 3.0-mL liquid body fluid specimens
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

Cadmium CD

Analyte	Program Code	Challenges per Shipment
	CD	
Beta-2-microglobulin, urine	▮	3
Cadmium, urine	▮	3
Cadmium, whole blood	▮	3
Creatinine, urine	▮	3

This Survey meets the Occupational Safety and Health Administration (OSHA) guidelines for proficiency testing (OSHA standard-29 CFR 1910.1027AppF).

Program Information

- Three 6.0-mL whole blood specimens and three 13.0-mL urine specimens
- Conventional and International System of Units (SI) reporting offered
- Six shipments per year

Cerebrospinal Fluid Chemistry M, OLI

Analyte	Program Code		Challenges per Shipment
	M	OLI	
Albumin, quantitative	▮	▮	3
Electrophoresis (albumin and gamma globulin)	▮	▮	3
Glucose	▮	▮	3
IgG, quantitative	▮	▮	3
Lactate	▮	▮	3
Lactate dehydrogenase (LD)	▮	▮	3
Protein, total	▮	▮	3
Oligoclonal bands		▮	3

Program Information

- M - Three 5.0-mL simulated liquid spinal fluid specimens
- OLI - Three 1.0-mL simulated liquid spinal fluid specimens and three paired serum specimens
- Two shipments per year

CE credit

Cystatin C CYS

Analyte	Program Code	Challenges per Shipment
	CYS	
Cystatin C	▮	2

Program Information

- Two 1.0-mL liquid serum specimens
- Two shipments per year

Fecal Calprotectin FCAL

NEW

Analyte	Program Code	Challenges per Shipment
	FCAL	
Fecal calprotectin	▮	3

Program Information
- Three 1.0-g simulated fecal specimens
- Two shipments per year

Fecal Fat FCFS

Analyte	Program Code	Challenges per Shipment
	FCFS	
Fecal fat, qualitative	▮	2

Program Information
- Two 10.0-g simulated fecal fat specimens
- For microscopic detection of neutral fats (triglycerides) and/or split fats (total free fatty acids)
- Two shipments per year

Fructosamine FT

Analyte	Program Code	Challenges per Shipment
	FT	
Fructosamine	▮	2

Program Information
- Two 1.0-mL liquid serum specimens
- Two shipments per year

Glucose-6-Phosphate Dehydrogenase G6PDS

Analyte	Program Code	Challenges per Shipment
	G6PDS	
G6PD, qualitative and quantitative	▮	2

Program Information
- Two 0.5-mL lyophilized hemolysate samples
- Two shipments per year

Lipoprotein-Associated Phospholipase A_2 PLA

Analyte	Program Code	Challenges per Shipment
	PLA	
Lipoprotein-associated phospholipase (Lp-PLA_2) activity	▮	2

Program Information
- Two 1.0-mL liquid specimens
- Two shipments per year

Lipoprotein and Protein Electrophoresis LPE, SPE, UBJP

Analyte	Program Code			Challenges per Shipment
	LPE	SPE	UBJP	
Lipoprotein electrophoresis	▮			2
IgA, quantitation		▮		2
IgG, quantitation		▮		2
IgM, quantitation		▮		2
M-protein (Paraprotein) identification		▮		2
Protein, total		▮		2
Protein electrophoresis		▮		2
Protein electrophoresis pattern interpretation		▮		2
Urine Bence Jones protein			▮	2

Program Information

- LPE - Two 1.0-mL liquid serum specimens
- SPE - Two 1.0-mL lyophilized serum specimens; two educational protein electrophoresis dry challenges per year
- UBJP - Two 10.0-mL urine specimens
- Two shipments per year

CE credit

Lamellar Body Count LBC

Procedure	Program Code	Challenges per Shipment
	LBC	
Lamellar body count	▮	3

Program Information

- Three 2.0-mL simulated liquid amniotic fluid specimens
- For use with LBC methods performed on all hematology analyzers
- Two shipments per year

Plasma Hemoglobin PHG

Analyte	Program Code	Challenges per Shipment
	PHG	
Plasma hemoglobin	▮	2

Program Information

- Two 2.0-mL liquid specimens
- Two shipments per year

Procalcitonin PCT

Analyte	Program Code	Challenges per Shipment
	PCT	
Procalcitonin	▮	3

Program Information
- Three 1.0-mL lyophilized serum specimens
- Two shipments per year

Pseudocholinesterase C7

Analyte	Program Code	Challenges per Shipment
	C7	
Pseudocholinesterase	▮	1

Program Information
- One 2.0-mL lyophilized serum specimen
- Three shipments per year

CE credit

Salivary Cortisol SALC

Analyte	Program Code	Challenges per Shipment
	SALC	
Salivary cortisol	▮	3

Program Information
- Three 1.0-mL synthetic oral fluid specimens
- Two shipments per year

Accuracy-Based Testosterone, Estradiol ABS

Analyte	Program Code	Challenges per Shipment
	ABS	
Albumin	▮	3
Calcium	▮	3
Cortisol	▮	3
Estradiol	▮	3
Follicle-stimulating hormone (FSH)	▮	3
Luteinizing hormone (LH)	▮	3
Sex hormone-binding globulin (SHBG)	▮	3
Testosterone	▮	3
Thyroid-stimulating hormone (TSH)	▮	3

Program Information
- Three 1.0-mL human serum specimens
- Two shipments per year

Additional Information
- The Centers for Disease Control and Prevention (CDC) will set target values for testosterone and estradiol using the established reference methods.

Total Bile Acids TBLA

Analyte	Program Code	Challenges per Shipment
	TBLA	
Total bile acids	▮	3

Program Information
- Three 5.0-mL liquid serum specimens
- Two shipments per year

Trace Metals R

Analyte	Program Code	Challenges per Shipment
	R	
Aluminum	▮	3
Chromium	▮	3
Copper	▮	3
Manganese	▮	3
Selenium	▮	3
Zinc	▮	3

Program Information
- Three 5.0-mL liquid serum specimens
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

Trace Metals, Urine TMU

Analyte	Program Code	Challenges per Shipment
	TMU	
Aluminum	▮	2
Arsenic	▮	2
Chromium	▮	2
Cobalt	▮	2
Copper	▮	2
Lead	▮	2
Manganese	▮	2
Mercury	▮	2
Selenium	▮	2
Thallium	▮	2
Zinc	▮	2

Program Information
- Two 25.0-mL urine specimens
- Conventional and International System of Units (SI) reporting offered
- For laboratories that monitor trace metals at normal and toxic levels
- Two shipments per year

Trace Metals, Whole Blood TMWB

Analyte	Program Code	Challenges per Shipment
	TMWB	
Aluminum	▮	3
Arsenic, total	▮	3
Chromium	▮	3
Cobalt	▮	3
Copper	▮	3
Manganese	▮	3
Mercury	▮	3
Selenium	▮	3
Thallium	▮	3
Zinc	▮	3

Program Information

- Three 6.0-mL whole blood specimens
- Conventional and International System of Units (SI) reporting offered
- For laboratories that monitor trace metals at normal and toxic levels
- Two shipments per year

Sweat Analysis Series SW1, SW2, SW3, SW4

Analyte	Program Code	Challenges per Shipment
	SW1, SW2, SW3, SW4	
Chloride	▮	3
Conductivity	▮	3

For method compatibility, see chart below.

Program Information

- Three 5.0-mL simulated liquid human sweat specimens
- Two shipments per year

Sweat Analysis Series Compatibility Matrix

Method/Procedure	Program Code				Materials Included
	SW1	SW2	SW3	SW4	
Orion direct electrode	▮				Precut 2-cm diameter Whatman filter papers
Wescor Macroduct™ and Nanoduct® Systems		▮			22-gauge blunt-tipped needles
CF Indicator System®			▮		Polystyrene boats and chloride-free sponges
All other methodologies				▮	No additional materials provided

Viscosity V

Analyte	Program Code	Challenges per Shipment
	V	
Viscosity	▮	2

Program Information
- Two 10.0-mL serum specimens
- Two shipments per year

Soluble Transferrin Receptor STFR

Analyte	Program Code	Challenges per Shipment
	STFR	
Soluble transferrin receptor (sTfR)	▮	3

Program Information
- Three 2.5-mL liquid human serum specimens
- Two shipments per year

Improve the reliability of your patient results with CAP Survey Validated Materials

Use the same material that is sent in the Surveys program to:

- Identify and troubleshoot instrument/method problems
- Correlate results with other laboratories or instruments
- Document correction of problems identified in Surveys
- Utilize material with confirmed results as an alternative external quality control
- Identify potential proficiency testing failures

Each laboratory receives a Survey Participant Summary, which includes readily available results.

Cerebrospinal Fluid, Validated Material

Validated Material	Program Code	Corresponding Survey	Page
Cerebrospinal Fluid	MVM	M	74

Program Information
- Three 5.0-mL simulated liquid spinal fluid specimens

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Online, hands-on and interactive, the Clinical Pathology Improvement Program (CPIP) enables pathologists to sharpen their diagnostic skills in real time by working through an actual case. Each month, you will receive a new case, including related images and clinical background. As the case unfolds, more information is revealed, just as in the laboratory. Participants who successfully complete the posttest may apply their earned credits to their Continuing Certification (CC), formerly known as Maintenance of Certification (MOC) SAM requirements. Enjoy a full year of CPIP and earn up to 15 CME/SAM credits.

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7 Endocrinology

Use the CAP's Participant Summary Reports to take your laboratory to the next level.

- Compare your results and methods against large peer groups for greater diagnostic confidence.
- Review the extensive discussion to further educate staff on testing trends and best practices.
- Earn continuing education credit with content that aligns with the proficiency testing challenge.

New Programs NEW

Endocrinology

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Ligand—General K, KK, K2

Analyte	Program Code		Challenges per Shipment
	K, KK	K2	
Alpha-fetoprotein (AFP)	▮		5
CEA	▮	▮	3
Cortisol	▮		5
Ferritin	▮	▮	3
Folate, serum	▮	▮	3
hCG, quantitative	▮		5
Immunoglobulin E (IgE)	▮		5
Prostate-specific antigen (PSA)	▮	▮	2 (K,KK)/3 (K2)
Prostate-specific antigen, complexed (cPSA)	▮		2
Prostate-specific antigen, free	▮		2
Prostatic acid phosphatase (PAP)	▮		3
T3, free (triiodothyronine, free)	▮		5
T3, total (triiodothyronine, total)	▮		5
T3 uptake and related tests	▮		5
T4, free (thyroxine, free)	▮		5
T4, total (thyroxine, total)	▮		5
Thyroid-stimulating hormone (TSH)	▮		5
Vitamin B_{12}	▮	▮	3

Program Information

- K - Five 5.0-mL liquid serum specimens; three shipments per year
- KK - Five 5.0-mL liquid serum specimens in duplicate; three shipments per year
- K2 - Three 5.0-mL liquid serum specimens; two shipments per year

MMA and Active B_{12} MMA

NEW

Analyte/Procedure	Program Code	Challenges per Shipment
	MMA	
Active vitamin B_{12}	▮	3
Methylmalonic acid	▮	3

Program Information

- Three 1.0-mL serum specimens
- Two shipments per year

B-Type Natriuretic Peptides BNP, BNP5

Analyte	Challenges per Shipment	
	Program Code	
	BNP	BNP5
BNP	2	5
NT-proBNP	2	5

Additional Information

- The College of American Pathologists Accreditation Program requires all accredited laboratories performing non-waived testing for BNP and NT-proBNP to complete 15 PT challenges per year.
- For i-STAT®, use Plasma Cardiac Markers programs PCARM or PCARMX.
- For second instrument reporting options, see the Quality Cross Check program, BNPQ, below.

Program Information

- BNP - Two 1.0-mL liquid plasma specimens
- Conventional and International System of Units (SI) reporting offered; two shipments per year
- BNP5 - Five 1.0-mL liquid plasma specimens
- Conventional and International System of Units (SI) reporting offered; three shipments per year

Quality Cross Check—BNP BNPQ

Analyte	Program Code	Challenges per Shipment
	BNPQ	
BNP	▮	3
NT-proBNP	▮	3

This program does not meet regulatory requirements for proficiency testing; see Survey BNP or BNP5 above. For additional information about the Quality Cross Check program, see page 40.

The Quality Cross Check Program:

- Provides a solution for monitoring performance across multiple instruments, and is in compliance with the CMS directive regarding proficiency testing on multiple instruments.
- Simplifies instrument comparability efforts by providing custom reports with both peer group comparison and instrument comparability statistics.

Program Information

- Three 1.5-mL liquid specimens
- Report up to three instruments
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

Ligand—Special Y, YY, DY

Analyte	Program Code		Challenges per Shipment
	Y, YY	DY	
11-deoxycortisol	▮		3
17-hydroxyprogesterone	▮		3
Androstenedione	▮		3
DHEA sulfate	▮		3
Estradiol	▮		3
Estriol, unconjugated (uE3)	▮		3
Follicle-stimulating hormone (FSH)	▮		3
Growth hormone (GH)	▮		3
IGF-1 (somatomedin C)	▮		3
Luteinizing hormone (LH)	▮		3
Progesterone	▮		3
Prolactin	▮		3
Testosterone	▮		3
Testosterone, bioavailable (measured)		▮	3
Testosterone, free (measured)		▮	3
Sex hormone-binding globulin (SHBG)		▮	3

Program Information

- Y - Three 5.0-mL liquid serum specimens in duplicate
- YY - Three 5.0-mL liquid serum specimens in triplicate
- DY - Must order in conjunction with Survey Y or YY
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

CE credit

Antimüllerian Hormone AMH

Analyte	Program Code	Challenges per Shipment
	AMH	
Antimüllerian hormone	▮	3

Program Information

- Three 1.0-mL lyophilized serum specimens
- Two shipments per year

25-OH Vitamin D, Total VITD

Analyte	Program Code	Challenges per Shipment
	VITD	
25-OH vitamin D, total	▮	3

Program Information

- Three 1.0-mL liquid serum specimens
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

Bone and Growth BGS

Analyte	Program Code	Challenges per Shipment
	BGS	
IGF-1 (somatomedin C)	▮	3
Osteocalcin	▮	3

Program Information

- Three 1.0-mL liquid serum specimens
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

CE credit

Accuracy-Based Vitamin D ABVD

Analyte	Program Code	Challenges per Shipment
	ABVD	
25-OH vitamin D (D2 and D3)	▮	3

Additional Information

- The Centers for Disease Control and Prevention (CDC) will establish reference targets using isotope-dilution LC-MS/MS method.
- Specimens are collected by a modified application of Clinical Laboratory and Standards Institute Guideline CLSI C37-A, *Preparation and Validation of Commutable Frozen Human Serum Pools as Secondary Reference Materials for Cholesterol Measurement Procedures; Approved Guideline.*

Program Information

- Three 1.0-mL liquid human serum specimens
- Serum is from multi-donor endogenous pools
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

Bone and Mineral Metabolism, Urine BU

Analyte	Program Code	Challenges per Shipment
	BU	
C-telopeptide (CTx)	▮	2
Creatinine	▮	2
Deoxypyridinoline (DPD)	▮	2
N-telopeptide (NTx)	▮	2
Pyridinoline (PYD)	▮	2

Program Information

- Two 2.0-mL lyophilized human urine specimens
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

CE credit

Bone Markers and Vitamins BMV1, BMV2, BMV3, BMV4, BMV5, BMV6

Analyte	Program Code						Challenges per Shipment
	BMV1	BMV2	BMV3	BMV4	BMV5	BMV6	
1,25 dihydroxy vitamin D	▮						3
Bone-specific alkaline phosphatase		▮					3
Vitamin A			▮				3
Vitamin E (alpha tocopherol, gamma tocopherol)				▮			3
C-telopeptide					▮		3
N-telopeptide						▮	3

Program Information
- BMV1 through BMV4 - Three 5.0-mL liquid serum specimens for each program
- BMV5 and BMV6 - Three 1.0-mL liquid serum specimens for each program
- Two shipments per year

Erythropoietin EPO

Analyte	Program Code	Challenges per Shipment
	EPO	
Erythropoietin	▮	2

Program Information
- Two 1.5-mL serum specimens
- Two shipments per year

CE credit

Fetal Fibronectin FF

Analyte	Program Code	Challenges per Shipment
	FF	
Fetal fibronectin	▮	2

Program Information
- Two 1.2-mL liquid specimens
- Two shipments per year

Insulin, Gastrin, C-Peptide, and PTH ING

Analyte	Program Code	Challenges per Shipment
	ING	
C-peptide	▮	3
Gastrin	▮	3
Insulin	▮	3
Parathyroid hormone (PTH)	▮	3

Program Information
- Three 5.0-mL lyophilized serum specimens
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

CE credit

Second Trimester Maternal Screening FP, FPX

Analyte	Program Code	Challenges per Shipment
	FP, FPX	
Alpha-fetoprotein (AFP), amniotic fluid	▮	2
Alpha-fetoprotein (AFP), serum	▮	5
Dimeric inhibin A (DIA)	▮	5
Estriol, unconjugated (uE3)	▮	5
Human chorionic gonadotropin (hCG), quantitative	▮	5

The CAP designed these Surveys for laboratories using AFP and hCG for prenatal screening purposes only. For all other applications, see Survey K or KK on page 82.

Program Information

- FP - Five 1.0-mL liquid serum specimens; two 1.0-mL simulated amniotic fluid specimens
- FPX - All Survey FP serum specimens in duplicate; two 1.0-mL simulated amniotic fluid specimens
- Three shipments per year

First Trimester Maternal Screening FP1T, FP1B

Analyte	Program Code		Challenges per Shipment
	FP1T	FP1B	
Total hCG	▮		5
Free beta hCG		▮	5
PAPP-A	▮	▮	5

The CAP designed these Surveys for laboratories using hCG for prenatal screening purposes only. For all other applications, see Survey K or KK on page 82.

Program Information

- FP1T - Five 1.0-mL serum specimens
- FP1B - Five 1.0-mL serum specimens
- Three shipments per year

Noninvasive Prenatal Testing NIPT

Analyte	Program Code	Challenges per Shipment
	NIPT	
Cell-free DNA screening for fetal aneuploidy	▮	3

Noninvasive prenatal testing is an exercise and is not considered proficiency testing. This exercise may be used to meet the requirements for alternative assessment.

Program Information

- Three maternal plasma samples
- Two shipments per year

Quality Cross Check—Parathyroid Hormone PTHQ

Analyte	Program Code	Challenges per Shipment
	PTHQ	
Parathyroid hormone (PTH)	▮	3

This program does not meet regulatory requirements for proficiency testing; see Survey ING on page 86. For additional information about the Quality Cross Check program, see page 40.

The Quality Cross Check Program:

- Provides a solution for monitoring performance across multiple instruments, and is in compliance with the CMS directive regarding proficiency testing on multiple instruments.
- Simplifies instrument comparability efforts by providing custom reports with both peer group comparison and instrument comparability statistics.

Program Information

- Three 5.0-mL lyophilized serum specimens in duplicate
- Report up to three instruments
- Two shipments per year

Pharmacogenetics PGX, PGX1, PGX2, PGX3

Analyte/Procedure	Program Code				Challenges per Shipment
	PGX	PGX1	PGX2	PGX3	
CYP2C19	▮				3
CYP2C9	▮				3
CYP2D6	▮				3
CYP3A4	▮				3
CYP3A5	▮				3
SLCO1B1 (rs4149056)	▮				3
VKORC1	▮				3
IL28B (rs12979860)		▮			3
*HLA-B*15:02*			▮		3
*HLA-B*57:01*			▮		3
DPYD				▮	3
TPMT				▮	3
UGT1A1				▮	3

Program Information

- Three 25.0-µg extracted DNA specimens
- Includes allele detection (genotyping) and/or interpretive challenges
- Two shipments per year

Additional Information

- *UGT1A1* (PGX3 Survey) tests the laboratory's ability to detect variants in the TATA repeat sequence in the *UGT1A1* promotor (eg, *UGT1A1*28* with seven TA repeats). The ability to detect variants in other regions of the *UGT1A1* gene is not part of this program.
- Survey PGX2 is designed for laboratories that provide *HLA-B*57:01* testing to identify risk of hypersensitivity to abacavir and *HLA-B*15:02* testing to identify risk of hypersensitivity to carbamazepine. The intended response is qualitative (presence/absence of the allele). This Survey is not appropriate for laboratories that perform molecular HLA typing. For HLA typing proficiency testing, please consult the HLA Molecular Typing (DML) Survey.

RBC Folate FOL

Analyte	Program Code	Challenges per Shipment
	FOL	
RBC folate	▮	2

Program Information

- Two 2.0-mL lyophilized whole blood specimens
- Conventional and International System of Units (SI) reporting offered
- Three shipments per year

Renin and Aldosterone RAP

Analyte	Program Code	Challenges per Shipment
	RAP	
Aldosterone	▮	3
Renin	▮	3

Program Information

- Three 2.0-mL lyophilized plasma specimens
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

CE credit

Tumor Markers TM, TMX

Analyte	Program Code	Challenges per Shipment
	TM, TMX	
Adrenocorticotropic hormone (ACTH)	▮	3
Beta-2 microglobulin	▮	3
CA 15-3	▮	3
CA 19-9	▮	3
CA 27.29	▮	3
CA 72-4	▮	3
CA 125	▮	3
Calcitonin	▮	3
Thyroglobulin	▮	3

Program Information

- TM - Three 2.0-mL liquid serum specimens
- TMX - All Survey TM specimens in duplicate
- Two shipments per year

Human Epididymis Protein 4 HUEP

Analyte	Program Code	Challenges per Shipment
	HUEP	
Human epididymis protein 4	▮	3

Program Information

- Three 1.0-mL lyophilized serum specimens
- Two shipments per year

Improve the reliability of your patient results with CAP Survey Validated Materials

Use the same material that is sent in the Surveys program to:

- Identify and troubleshoot instrument/method problems
- Correlate results with other laboratories or instruments
- Document correction of problems identified in Surveys
- Utilize material with confirmed results as an alternative external quality control
- Identify potential proficiency testing failures

Each laboratory receives a Survey Participant Summary, which includes readily available results.

Endocrinology, Validated Materials

Validated Material	Program Code	Corresponding Survey	Page
Ligand—General	KVM	K	82
Ligand—Special	YVM	Y	84

Program Information

- KVM - Five 5.0-mL liquid serum specimens; three shipments per year
- YVM - Six 5.0-mL liquid serum specimens in duplicate; two shipments per year

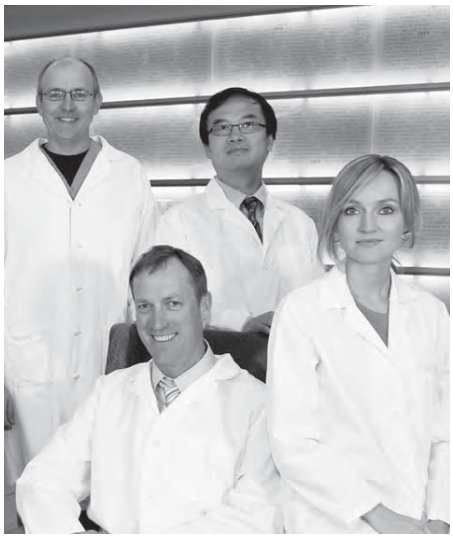
We are here to help. Fast Focus on Compliance—the inspector's quick guide

A resource for laboratories and inspectors alike, our Fast Focus on Compliance mini-training vignettes help you prepare for future laboratory inspections by gaining a clear understanding of the requirements and receiving insight into areas that need improvement:

- Inspecting Method Validation/Verification Studies
- Inspecting Personnel Records
- 12 Inspector Tools to Make Your Inspection Go More Smoothly
- Proficiency Testing Referral and Communications
- Competency Assessment
- Documenting Your Inspection Findings

Access these concentrated topics online by searching *Fast Focus on Compliance* at cap.org

8 Blood Gas, Critical Care, and Oximetry



Benefit from the support of 600 experts in laboratory medicine.

These experts spend countless hours monitoring testing trends to:

- Determine specimen specifications to challenge participants.
- Keep our offerings contemporary with new analytes and programs.
- Provide peer-reviewed continuing medical education, continuing education, and self-assessment modules.

Blood Gas, Critical Care, and Oximetry

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

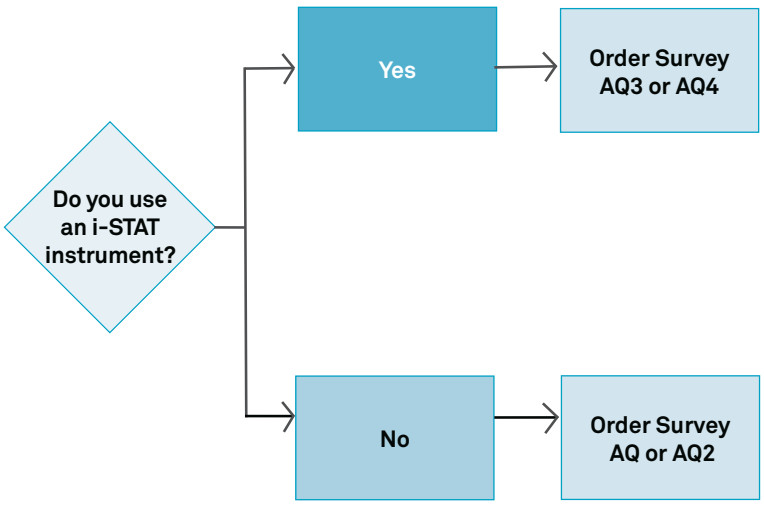
Critical Care Blood Gas AQ, AQ2, AQ3, AQ4

Analyte	Program Code				Challenges per Shipment
	AQ	AQ2	AQ3	AQ4	
Calcium, ionized	▮	▮	▮	▮	2
Chloride	▮	▮	▮	▮	5
Hematocrit	▮	▮	▮	▮	5
Hemoglobin, estimated	▮	▮	▮	▮	5
Lactate	▮	▮	▮	▮	2
Magnesium, ionized	▮	▮			2
***P*CO$_2$**	▮	▮	▮	▮	5
pH	▮	▮	▮	▮	5
***P*O$_2$**	▮	▮	▮	▮	5
Potassium	▮	▮	▮	▮	5
Sodium	▮	▮	▮	▮	5
tCO$_2$	▮	▮	▮	▮	5
Creatinine		▮		▮	5
Glucose		▮		▮	5
Urea nitrogen (BUN)		▮		▮	5

For second instrument reporting options, see the Quality Cross Check programs, AQQ, AQ2Q, AQ3Q, and AQ4Q, on page 93.

Program Information

- AQ, AQ2 - Five 2.5-mL aqueous specimens in duplicate and five 2.5-mL specimens for hematocrit testing in duplicate; appropriate for all methods except i-STAT®
- AQ3, AQ4 - Five 2.5-mL specimens in duplicate for i-STAT methods only
- Conventional and International System of Units (SI) reporting offered
- Three shipments per year



Quality Cross Check—Blood Gas AQQ, AQ2Q, AQ3Q, AQ4Q

Analyte	Program Code				Challenges per Shipment
	AQQ	AQ2Q	AQ3Q	AQ4Q	
Calcium, ionized	▮	▮	▮	▮	3
Chloride	▮	▮	▮	▮	3
Hematocrit	▮	▮	▮	▮	3
Hemoglobin, estimated	▮	▮	▮	▮	3
Lactate	▮	▮	▮	▮	3
Magnesium, ionized	▮	▮			3
PCO_2	▮	▮	▮	▮	3
pH	▮	▮	▮	▮	3
PO_2	▮	▮	▮	▮	3
Potassium	▮	▮	▮	▮	3
Sodium	▮	▮	▮	▮	3
tCO_2	▮	▮	▮	▮	3
Creatinine		▮		▮	3
Glucose		▮		▮	3
Urea nitrogen (BUN)		▮		▮	3

These programs do not meet regulatory requirements for proficiency testing; see Surveys AQ and AQ2-AQ4 on page 92. For additional information about the Quality Cross Check program, see page 40.

The Quality Cross Check Program:

- Provides a solution for monitoring performance across multiple instruments, and is in compliance with the CMS directive regarding proficiency testing on multiple instruments.
- Simplifies instrument comparability efforts by providing custom reports with both peer group comparison and instrument comparability statistics.

Program Information

- AQQ, AQ2Q - Three 2.5-mL specimens in triplicate and three 2.5-mL specimens for hematocrit testing in triplicate; appropriate for all methods except i-STAT®
- AQ3Q, AQ4Q - Three 1.7-mL specimens in triplicate for i-STAT methods only
- Report up to three instruments
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

Blood Oximetry SO

Analyte	Program Code	Challenges per Shipment
	SO	
Carboxyhemoglobin	▮	5
Hematocrit, estimated	▮	5
Hemoglobin, total	▮	5
Methemoglobin	▮	5
Oxyhemoglobin	▮	5

Program Information

- Five 1.8-mL stabilized human hemoglobin solution specimens
- Conventional and International System of Units (SI) reporting offered
- Three shipments per year

Additional Information

- This Survey is not compatible with Oxicom-2000, -2100, or -3000 whole blood oximeters.
- For second instrument reporting options, see the Quality Cross Check program, SOQ, below.

Quality Cross Check—Blood Oximetry SOQ

Analyte	Program Code	Challenges per Shipment
	SOQ	
Carboxyhemoglobin	▮	3
Hematocrit, estimated	▮	3
Hemoglobin, total	▮	3
Methemoglobin	▮	3
Oxyhemoglobin	▮	3

Program Information

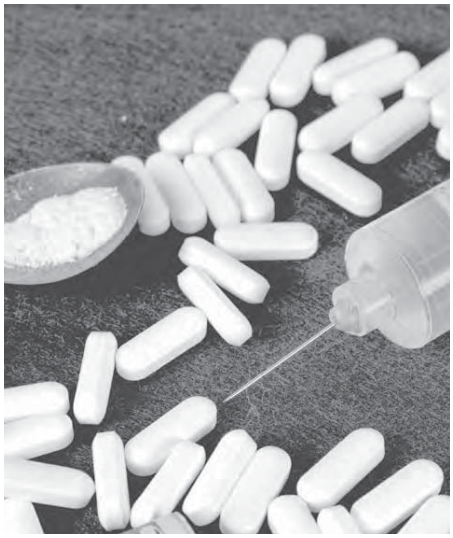
- Three 1.2-mL liquid specimens in triplicate
- Report up to three instruments
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

This program does not meet regulatory requirements for proficency testing; see Survey SO above.
For additional information about the Quality Cross Check program, see page 40.

The Quality Cross Check Program:

- Provides a solution for monitoring performance across multiple instruments, and is in compliance with the CMS directive regarding proficiency testing on multiple instruments.
- Simplifies instrument comparability efforts by providing custom reports with both peer group comparison and instrument comparability statistics.

9 Toxicology



Keep pace with the growing opioid abuse crisis.

- The new Novel Opioids and Benzodiazepines program (NOB) includes challenges covering a mix of designer drugs from a regularly updated list.
- Benchmark opioid urine drug testing turnaround times for initial and definitive testing and identify gaps in testing protocols with the new Q-PROBES™ Opioid Testing Stewardship program (QP192).

New Programs NEW

New Analyte/Drug Additions NEW

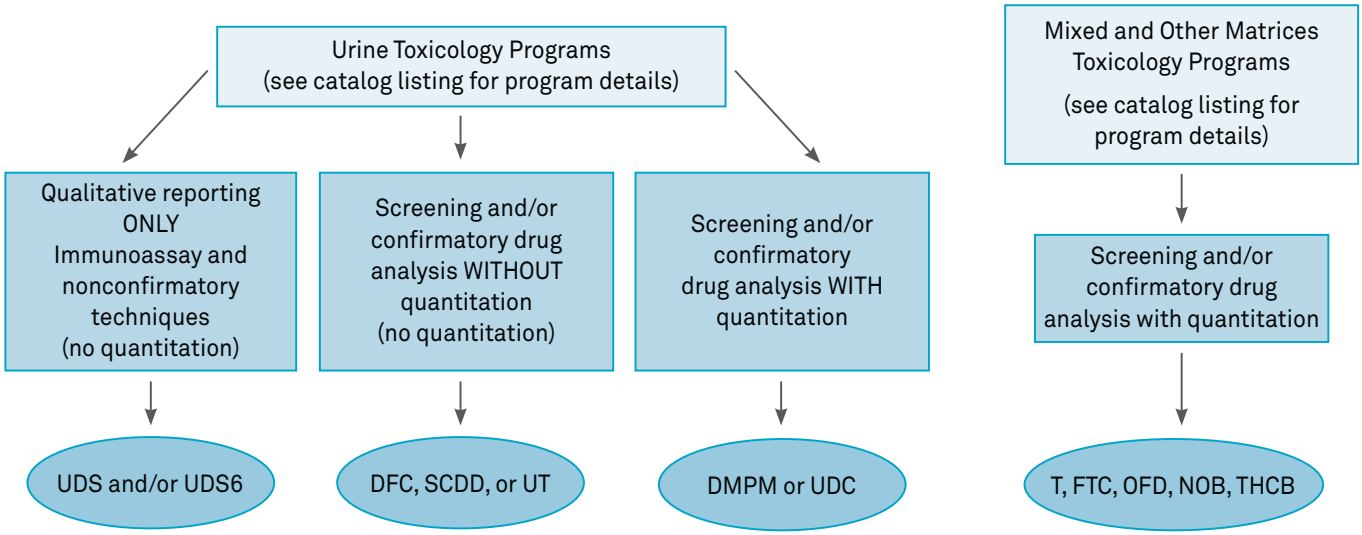
Deleted Programs

Toxicology Quality Program (TQP)

Toxicology

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Use this flowchart as a guide for ordering appropriate toxicology Surveys for your laboratory's testing menu.



Toxicology T

Analyte	Program Code	Challenges per Shipment
	T	
See drug listing on next page	▮	5

Program Information

- A total of five specimens consisting of 20.0-mL liquid serum and 50.0-mL liquid urine specimens
- For laboratories performing qualitative and quantitative drug analysis on serum and qualitative analysis on urine specimens
- Three shipments per year

Urine Toxicology UT

Analyte	Program Code	Challenges per Shipment
	UT	
See drug listing on next page	▮	5

Program Information

- Five 50.0-mL liquid urine specimens
- For laboratories performing qualitative drug analysis with qualitative confirmatory testing
- Three shipments per year

T and UT Programs Drug Listing

Challenges will include a mix of drugs from the list below.

6-acetylmorphine (6-AM)
7-aminoclonazepam
7-aminoflunitrazepam
Acetaminophen
Alpha-hydroxyalprazolam
Alprazolam
Amitriptyline
Amphetamine
Amphetamine group
Aripiprazole
Atenolol
Atropine
Barbiturate group
Benzodiazepine group
Benzoylecgonine
Brompheniramine
Buprenorphine
Bupropion
Butalbital
Cannabinoids
Carbamazepine
Carbamazepine-10, 11-epoxide
Carisoprodol
Chlordiazepoxide
Chlorpheniramine
Citalopram
Clomipramine
Clonazepam
Clozapine
Cocaethylene
Cocaine
Codeine
Cotinine
Cyclobenzaprine
Delta-9-THC (serum only)
Delta-9-THC-COOH
Desipramine
Desmethylclomipramine
Desmethylcyclobenzaprine*
Desmethylsertraline
Dextromethorphan
Diazepam
Dihydrocodeine
Diltiazem
Diphenhydramine
Doxepin
Doxylamine
Duloxetine
Ecgonine ethyl ester
Ecgonine methyl ester
Ephedrine
Fentanyl
Flunitrazepam
Fluoxetine
Gabapentin
Hydrocodone
Hydromorphone
Hydroxybupropion NEW
Hydroxyzine
Ibuprofen
Imipramine
Ketamine
Lamotrigine
Levetiracetam
Lidocaine
Lorazepam
Lysergic acid diethylamide (LSD)
Meperidine
Mephedrone
Meprobamate
Methadone
Methadone metabolite (EDDP)
Methamphetamine
Methylenedioxy-amphetamine (MDA)
Methylenedioxy-methamphetamine (MDMA)
Methylenedioxy-pyrovalerone (MDPV)
Methylphenidate
Metoprolol
Mirtazapine
Morphine
N-desmethyltramadol
Naproxen
Nicotine
Norbuprenorphine
Norchlordiazepoxide
Norclomipramine
Norcodeine
Norcyclobenzaprine*
Nordiazepam
Nordoxepin
Norfentanyl
Norfluoxetine
Norketamine
Normeperidine
Noroxycodone
Norpropoxyphene
Norsertraline
Nortrimipramine
Nortriptyline
Norverapamil
O-desmethyltramadol
Olanzapine
Opiate group
Oxazepam
Oxycodone
Oxymorphone
Paroxetine
Pentobarbital
Phencyclidine
Phenethylamine
Pheniramine
Phenobarbital
Phentermine
Phenylephrine
Phenytoin
Pregabalin
Propoxyphene
Propranolol
Pseudoephedrine
Quetiapine
Quinidine
Quinine
Ranitidine
Salicylates
Sertraline
Strychnine
Temazepam
Topiramate
Tramadol
Trazodone
Tricyclic group
Trimipramine
Valproic acid
Venlafaxine
Verapamil
Zolpidem

*Same compound

CAP/AACC Urine Drug Testing, Screening UDS, UDS6

Analyte	Program Code	
	Challenges per Shipment	
	UDS	UDS6 Limited
Acetaminophen	5	3
Amphetamine	5	3
Amphetamine/methamphetamine group	5	3
Barbiturate group	5	3
Benzodiazepine group	5	3
Benzoylecgonine/cocaine metabolites	5	3
Buprenorphine and metabolites	5	3
Delta-9-THC-COOH	5	3
Ethanol	5	3
Fentanyl	5	3
Lysergic acid diethylamide (LSD)	5	3
Methadone	5	3
Methadone metabolite (EDDP)	5	3
Methamphetamine	5	3
Methaqualone	5	3
Methylenedioxymethamphetamine (MDMA)	5	3
Opiate group	5	3
Oxycodone	5	3
Phencyclidine	5	3
Propoxyphene	5	3
Tricyclic group	5	3

Program Information

- UDS - Five 10.0-mL liquid urine specimens; three shipments per year
- UDS6 - Three 10.0-mL liquid urine specimens; two shipments per year
- For laboratories performing drugs of abuse testing on urine specimens using immunoassay or other screening techniques only
- Participants will have access to the AACC quarterly newsletter, *Clinical & Forensic Toxicology News*

AACC

Urine Drug Adulterant/Integrity DAI

Analyte	Program Code	Challenges per Shipment
	DAI	
Creatinine	▮	3
Glutaraldehyde	▮	3
Nitrite	▮	3
Oxidants	▮	3
pH	▮	3
Specific gravity	▮	3

Program Information

- Three 25.0-mL urine specimens
- Two shipments per year

CAP/AACC Forensic Urine Drug Testing, Confirmatory UDC

Analyte	Program Code	Challenges per Shipment
	UDC	
6-acetylmorphine (6-AM)	▮	10
Alpha-hydroxyalprazolam	▮	10
Amphetamine	▮	10
Benzoylecgonine	▮	10
Buprenorphine	▮	10
Butalbital	▮	10
Codeine	▮	10
Delta-9-THC-COOH	▮	10
Hydrocodone	▮	10
Hydromorphone	▮	10
Lorazepam	▮	10
Methadone	▮	10
Methadone metabolite (EDDP)	▮	10
Methamphetamine	▮	10
Methaqualone	▮	10
Methylenedioxyamphetamine (MDA)	▮	10
Methylenedioxyethylamphetamine (MDEA)	▮	10
Methylenedioxymethamphetamine (MDMA)	▮	10
Morphine	▮	10
Norbuprenorphine	▮	10
Nordiazepam	▮	10
Norpropoxyphene	▮	10
Oxazepam	▮	10
Oxycodone	▮	10
Oxymorphone	▮	10
Phencyclidine	▮	10
Phenobarbital	▮	10
Propoxyphene	▮	10
Secobarbital	▮	10
Temazepam	▮	10
Adulterant/Integrity Indicator		
Creatinine	▮	10
pH	▮	10
Specific gravity	▮	10

Program Information

- Ten 50.0-mL liquid urine specimens
- For laboratories that perform both screening and confirmatory testing, including quantitation, for drugs of abuse in urine specimens; laboratories are asked to report creatinine, pH, and specific gravity for each specimen to ensure specimen adulteration has not occurred
- Participants will have access to the AACC quarterly newsletter, *Clinical & Forensic Toxicology News*
- Four shipments per year

AACC

Oral Fluid for Drugs of Abuse OFD

Analyte	Program Code	Challenges per Shipment
	OFD	
Amphetamine Group	▮	5
Amphetamine	▮	5
Methamphetamine	▮	5
Methylenedioxyamphetamine (MDA)	▮	5
Methylenedioxyethylamphetamine (MDEA)	▮	5
Methylenedioxymethamphetamine (MDMA)	▮	5
Benzodiazepine Group	▮	5
Alprazolam	▮	5
Diazepam	▮	5
Nordiazepam	▮	5
Oxazepam	▮	5
Temazepam	▮	5
Buprenorphine	▮	5
Buprenorphine and norbuprenorphine	▮	5
Cocaine and/or metabolite	▮	5
Benzoylecgonine	▮	5
Cocaine	▮	5
Cannabinoids	▮	5
Delta-9-THC	▮	5
Delta-9-THC-COOH	▮	5
Methadone	▮	5
Opiate Group	▮	5
6-acetylmorphine (6-AM)	▮	5
Codeine	▮	5
Hydrocodone	▮	5
Hydromorphone	▮	5
Morphine	▮	5
Oxycodone	▮	5
Oxymorphone	▮	5
Phencyclidine (PCP)	▮	5

Program Information

- Five 2.0-mL oral fluid specimens
- For laboratories performing drug screening, confirmation, and quantitation
- Four shipments per year

Vitreous Fluid, Postmortem VF

Analyte	Program Code	Challenges per Shipment
	VF	
Acetone	▮	3
Chloride	▮	3
Creatinine	▮	3
Ethanol	▮	3
Glucose	▮	3
Potassium	▮	3
Sodium	▮	3
Vitreous urea nitrogen	▮	3

Program Information

- Three 5.0-mL synthetic vitreous fluid specimens
- For forensic and other toxicology laboratories that perform quantitative analysis of vitreous fluid
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

Serum Drug Screening SDS

Analyte	Program Code	Challenges per Shipment
	SDS	
Acetaminophen, quantitative	▮	3
Acetone, semiquantitative and qualitative	▮	3
Barbiturate group, qualitative	▮	3
Benzodiazepine group, qualitative	▮	3
Salicylate, quantitative	▮	3
Total tricyclic antidepressants, qualitative	▮	3

Program Information

- Three 2.0-mL serum specimens
- For laboratories that perform serum drug screening using immunoassay or other screening techniques
- Two shipments per year

CAP/AACC Alcohol/Volatiles AL1,* AL2

Analyte	Program Code		Challenges per Shipment
	AL1* Whole Blood	AL2 Serum	
Acetone, quantitative	▮	▮	5
Ethanol, quantitative	▮	▮	5
Ethylene glycol, qualitative and quantitative	▮	▮	5
Isopropanol, quantitative	▮	▮	5
Methanol, quantitative	▮	▮	5

*The American Society of Crime Laboratory Directors/Laboratory Accreditation Board Proficiency Review Committee (ASCLD/LAB PRC) has approved Survey AL1.

Program Information

- AL1 - Five 5.0-mL liquid whole blood specimens; conventional reporting
- AL2 - Five 2.0-mL liquid serum specimens; conventional and International System of Units (SI) reporting offered
- Three shipments per year

AACC

Ethanol Biomarkers ETB

Analyte	Program Code	Challenges per Shipment
	ETB	
Ethyl glucuronide (EtG), qualitative and quantitative	▮	3
Ethyl sulfate (EtS), quantitative	▮	3

Program Information
- Three 10.0-mL synthetic urine specimens
- Two shipments per year

CAP/AACC Blood Lead BL

Analyte	Program Code	Challenges per Shipment
	BL	
Lead	▮	5

This Survey meets the Occupational Safety and Health Administration (OSHA) requirements for proficiency testing [OSHA lead standards-29 CFR 1910.1025(j)(2)(iii)].

Program Information
- Five 6.0-mL liquid nonhuman whole blood specimens
- Conventional and International System of Units (SI) reporting offered
- Three shipments per year

AACC

Cadmium CD

Analyte	Program Code	Challenges per Shipment
	CD	
Beta-2-microglobulin, urine	▮	3
Cadmium, urine	▮	3
Cadmium, whole blood	▮	3
Creatinine, urine	▮	3

This Survey meets the Occupational Safety and Health Administration (OSHA) guidelines for proficiency testing (OSHA standard-29 CFR 1910.1027AppF).

Program Information
- Three 6.0-mL whole blood specimens and three 13.0-mL urine specimens
- Conventional and International System of Units (SI) reporting offered
- Six shipments per year

Nicotine and Tobacco Alkaloids NTA

Analyte	Program Code	Challenges per Shipment
	NTA	
Anabasine	▮	3
Cotinine	▮	3
Nicotine	▮	3

Program Information
- Three 25.0-mL urine specimens
- Designed for laboratories that qualitatively and/or quantitatively test for anabasine, cotinine, and/or nicotine in urine
- Two shipments per year

Trace Metals, Urine TMU

Analyte	Program Code	Challenges per Shipment
	TMU	
Aluminum	▮	2
Arsenic	▮	2
Chromium	▮	2
Cobalt	▮	2
Copper	▮	2
Lead	▮	2
Manganese	▮	2
Mercury	▮	2
Selenium	▮	2
Thallium	▮	2
Zinc	▮	2

Program Information

- Two 25.0-mL urine specimens
- Conventional and International System of Units (SI) reporting offered
- For laboratories that monitor trace metals at normal and toxic levels
- Two shipments per year

Trace Metals, Whole Blood TMWB

Analyte	Program Code	Challenges per Shipment
	TMWB	
Aluminum	▮	3
Arsenic, total	▮	3
Chromium	▮	3
Cobalt	▮	3
Copper	▮	3
Manganese	▮	3
Mercury	▮	3
Selenium	▮	3
Thallium	▮	3
Zinc	▮	3

Program Information

- Three 6.0-mL whole blood specimens
- Conventional and International System of Units (SI) reporting offered
- For laboratories that monitor trace metals at normal and toxic levels
- Two shipments per year

Forensic Toxicology, Criminalistics FTC

Analyte	Program Code	Challenges per Shipment
	FTC	
See drug listing below	▮	4

The American Society of Crime Laboratory Directors/Laboratory Accreditation Board Proficiency Review Committee (ASCLD/LAB PRC) has approved Survey FTC.

Program Information

- Three 20.0-mL whole blood specimens and one 20.0-mL synthetic urine specimen
- For crime and hospital laboratories that have forensic toxicology divisions performing qualitative and quantitative analysis of drugs in whole blood specimens along with a urine qualitative challenge
- Two shipments per year

FTC Program Drug Listing

Challenges will include a mix of drugs from the list below.

6-acetylmorphine (6-AM)
7-aminoclonazepam
7-aminoflunitrazepam
Acetaminophen
Alpha-hydroxyalprazolam
Alprazolam
Amitriptyline
Amphetamine
Benzoylecgonine
Brompheniramine
Butalbital
Carisoprodol
Chlorpheniramine
Clonazepam
Cocaethylene
Cocaine
Codeine
Cyclobenzaprine*
Delta-9-THC
Delta-9-THC-COOH
Desipramine
Desmethylcyclobenzaprine
Dextromethorphan
Diazepam
Diphenhydramine
Doxepin
Ecgonine ethyl ester
Ecgonine methyl ester
Ephedrine
Fentanyl*
Fluoxetine
Flurazepam*
Gamma-hydroxybutyrate (GHB)
Hydrocodone
Hydromorphone
Imipramine
Ketamine
Lorazepam
Lysergic acid diethylamide (LSD)
Meperidine*
Meprobamate
Methadone
Methadone metabolite (EDDP)
Methamphetamine
Methylenedioxyamphetamine (MDA)
Methylenedioxymethamphetamine (MDMA)
Morphine*
N-desmethyltramadol
Nordiazepam
Nordoxepin
Norfentanyl
Norfluoxetine
Norketamine
Norpropoxyphene
Norsertraline
Nortriptyline
Oxazepam
Oxycodone
Oxymorphone
Paroxetine
Phencyclidine
Phenethylamine
Phenobarbital
Phentermine
Phenytoin
Propoxyphene
Pseudoephedrine
Salicylate
Secobarbital
Sertraline
Temazepam
Tramadol*
Trazodone
Zolpidem

*and/or metabolite(s)

Synthetic Cannabinoid/Designer Drugs SCDD

Analyte	Program Code	Challenges per Shipment
	SCDD	
Synthetic cannabinoid/designer drugs	▮	3

Additional Information

Synthetic cannabinoids and designer drug stimulants are widespread and constantly changing in respect to the available chemical moieties. In order to stay contemporary, the CAP has decided to modify the compounds in this program in accordance with the appearance and prevalence of new compounds.

Program Information

- Three 20.0-mL urine specimens
- For laboratories that perform screening and confirmatory testing for the compounds found in this program
- Two shipments per year

SCDD Program Drug Listing

Challenges will include a mix of drugs.

For the most current list of drugs, please go to cap.org. Click on Catalog and Shipping Information. The list is located under the PT Order Supplements header.

Novel Opioids and Benzodiazepines NOB

NEW

Analyte	Program Code	Challenges per Shipment
	NOB	
Novel opioids and benzodiazepines	▮	3

NOB Program Drug Listing. Challenges will include a mix of drugs. For the most current list of drugs, please go to cap.org. Click on Catalog and Shipping Information. The list is located under the PT Order Supplements header.

Program Information

- Three 15.0-mL whole blood specimens
- For forensic and toxicology laboratories that perform qualitative and/or quantitative analysis of synthetic opioids and benzodiazepines
- Two shipments per year

Blood Cannabinoids THCB

NEW

Analyte	Program Code	Challenges per Shipment
	THCB	
Delta-9-THC	▮	3
Delta-9-THC-COOH	▮	3
11-hydroxy-THC	▮	3

Program Information

- Three 10.0-mL whole blood specimens
- For toxicology laboratories that perform qualitative and/or quantitative analysis of cannabinoids in blood
- Two shipments per year

Antifungal Drugs Monitoring AFD

NEW

Analyte	Program Code	Challenges per Shipment
	AFD	
Fluconazole	▮	3
Itraconazole	▮	3
Posaconazole	▮	3
Voriconazole	▮	3

Program Information

- Three 5.0-mL serum specimens
- For laboratories performing quantitative analysis of antifungal agents
- Two shipments per year

Urinalysis Benchtop Reference Guide (UABRG)

- Thirty-four different cell identifications, including common and rare cells
- Detailed descriptions for each cell morphology
- Eight tabbed sections for easy reference
  - Urinary Cells
  - Urinary Casts
  - Urinary Crystals
    - At Acid pH
    - At Neutral or Acid pH
    - At Neutral or Alkaline pH
  - Organisms
  - Miscellaneous/Exogenous
- A durable and water-resistant format to withstand years of benchtop use—5" by 6½"

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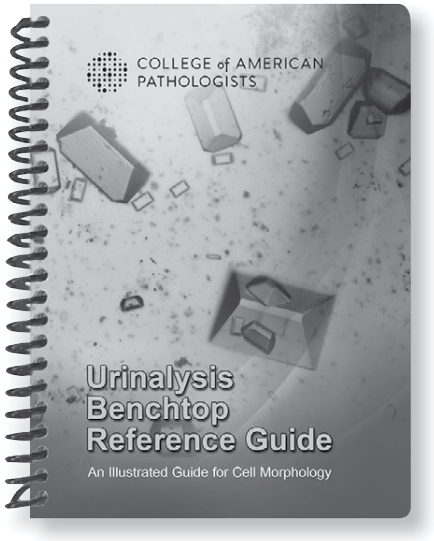

Item number: UABRG
Spiral bound; 38 pages; 34 images; 2014

Drug Monitoring for Pain Management DMPM		
Analyte	**Program Code**	**Challenges per Shipment**
	DMPM	
See drug listing below	▮	3

Program Information

- Three 40.0-mL urine specimens
- For laboratories offering qualitative, confirmatory, and/or quantitative urine drug analysis for pain management
- Includes clinical cases and questions along with detailed descriptions of how to interpret test results
- Two shipments per year

DMPM Program Drug Listing

Challenges will include a mix of drugs from the list below.

Amphetamine group
6-acetylmorphine (6-AM)
7-aminoclonazepam
Alpha-hydroxyalprazolam
Alprazolam
Amphetamine
Barbiturate group
Benzodiazepine group
Benzoylecgonine
Buprenorphine
Buprenorphine and/or metabolites
Butalbital
Cannabinoids
Carisoprodol
Carisoprodol and/or metabolites
Clonazepam
Cocaine
Cocaine and/or metabolites
Codeine
Delta-9-THC-COOH
Diazepam
Fentanyl
Fentanyl and/or metabolites
Gabapentin
Hydrocodone
Hydromorphone
l-Amphetamine NEW
l-Methamphetamine NEW
Lorazepam
Lorazepam glucuronide
Meperidine
Meperidine and/or metabolites
Meprobamate
Methadone
Methadone metabolite (EDDP)
Methamphetamine
Methylenedioxyamphetamine (MDA)
Methylenedioxymethamphetamine (MDMA)
Morphine
N-desmethyltramadol
Norbuprenorphine
Nordiazepam
Norfentanyl
Normeperidine
Noroxycodone
Noroxymorphone
Norpropoxyphene
O-desmethyltramadol
Opiate group
Oxazepam
Oxycodone
Oxymorphone
Phenobarbital NEW
Pregabalin
Propoxyphene
Propoxyphene and/or metabolites
Tapentadol NEW
Tapentadol-O-sulfate NEW
Temazepam
Tramadol
Tramadol and/or metabolites

Drug-Facilitated Crime DFC		
Analyte	**Program Code**	**Challenges per Shipment**
	DFC	
See drug listing below	▮	3

Program Information

- Three 25.0-mL urine specimens
- For laboratories performing qualitative urine drug analysis with confirmation testing
- Designed for laboratories performing testing for drugs associated with drug-facilitated crimes, which target drugs at much lower concentrations than in other toxicology Surveys
- Two shipments per year

DFC Program Drug Listing

Challenges will include a mix of drugs from the list below.

4-hydroxytriazolam
7-aminoclonazepam
7-aminoflunitazepam
Alpha-hydroxyalprazolam
Amitriptyline
Amobarbital
Amphetamine
Benzoylecgonine
Brompheniramine
Butalbital
Carisoprodol
Chlorpheniramine
Citalopram/escitalopram
Clonidine
Codeine
Cyclobenzaprine
Delta-9-THC-COOH
Desipramine
Dextromethorphan
Diphenhydramine
Doxepin
Doxylamine
Fentanyl
Fluoxetine
Gamma hydroxybutyrate (GHB)
Hydrocodone
Hydromorphone
Imipramine
Ketamine
Lorazepam
Meperidine
Meprobamate
Methadone
Methadone metabolite (EDDP)
Methamphetamine
Methylenedioxyamphetamine (MDA)
Methylenedioxymethamphetamine (MDMA)
Morphine
Nordoxepin
Norfluoxetine
Norketamine
Normeperidine
Norpropoxyphene
Norsertraline
Nortriptyline
Oxazepam
Oxycodone
Oxymorphone
Paroxetine
Pentobarbital
Phencyclidine (PCP)
Phenobarbital
Phenytoin
Propoxyphene
Scopolamine
Secobarbital
Sertraline
Temazepam
Tetrahydrozoline
Tramadol
Valproic Acid
Zaleplon
Ziprasidone
Zolpidem
Zopiclone/Eszopiclone

Improve the reliability of your patient results with CAP Survey Validated Materials

Use the same material that is sent in the Surveys program. Each laboratory receives a Survey Participant Summary, which includes readily available results.

Toxicology, Validated Material

Validated Material	Program Code	Corresponding Survey	Page
Urine Drug Testing, Screen	UDSM	UDS	98

Program Information

- Five 10.0-mL liquid urine specimens
- Three shipments per year

Find a practical guide to toxicology laboratory operations with this resource

Clinical Toxicology Testing
A Guide for Laboratory Professionals **(PUB220)**

Complex issues face the laboratory director or pathologist who offers toxicology services. This thorough reference book will guide both experienced physicians and those in training through the pharmacological principles, testing menus, and methodologies for toxicology testing.

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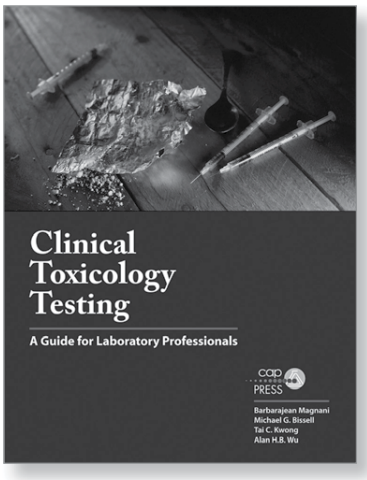

Item number: PUB220
Softcover; 304 pages; 2012

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- Specimens in the accuracy-based programs are from human donors and are matrix-effect free.
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- New Accuracy-Based Glucose, Insulin, and C-Peptide (ABGIC) program reflects current testing trends for diabetics with kidney failure.
- Results provide feedback to manufacturers regarding their calibrations.

Accuracy-Based Programs

New Programs NEW

Accuracy-Based Programs

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Accuracy-Based Lipids ABL

Analyte	Program Code	Challenges per Shipment
	ABL	
Apolipoprotein A1*	▮	3
Apolipoprotein B*	▮	3
Cholesterol*	▮	3
HDL cholesterol*	▮	3
Non-HDL cholesterol	▮	3
LDL cholesterol	▮	3
Lipoprotein (a)	▮	3
Triglycerides*	▮	3

*This analyte will be evaluated against the reference method.

Program Information

- Three 1.0-mL human serum specimens
- Two shipments per year

Accuracy-Based Vitamin D ABVD

Analyte	Program Code	Challenges per Shipment
	ABVD	
25-OH vitamin D (D2 and D3)	▮	3

Additional Information

- The Centers for Disease Control and Prevention (CDC) will establish reference targets using isotope-dilution LC-MS/MS method.
- Specimens are collected by a modified application of Clinical Laboratory and Standards Institute Guideline CLSI C37-A, *Preparation and Validation of Commutable Frozen Human Serum Pools as Secondary Reference Materials for Cholesterol Measurement Procedures; Approved Guideline.*

Program Information

- Three 1.0-mL liquid human serum specimens
- Serum is from multi-donor endogenous pools
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

Have you created or updated your CAP Profile?

Each laboratory staff member should have their own profile. Your profile is transferrable when you leave your current position. Use it to maintain information about yourself, including:

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- Certifications
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- Inspector-related information
- Personal contact information
- Specialties and skills
- Addresses

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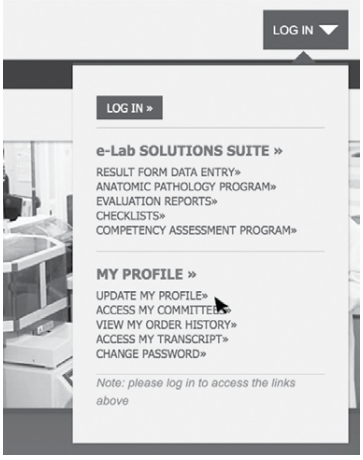

Accuracy-Based Testosterone, Estradiol ABS

Analyte	Program Code	Challenges per Shipment
	ABS	
Albumin	▮	3
Calcium	▮	3
Cortisol	▮	3
Estradiol	▮	3
Follicle-stimulating hormone (FSH)	▮	3
Luteinizing hormone (LH)	▮	3
Sex hormone-binding globulin (SHBG)	▮	3
Testosterone	▮	3
Thyroid-stimulating hormone (TSH)	▮	3

Program Information

- Three 1.0-mL human serum specimens
- Two shipments per year

Additional Information

- The Centers for Disease Control and Prevention (CDC) will set target values for testosterone and estradiol using the established reference methods.

Accuracy-Based Urine ABU

Analyte	Program Code	Challenges per Shipment
	ABU	
Calcium	▮	3
Creatinine	▮	3
Protein, total	▮	3
Urine albumin, quantitative	▮	3
Urine albumin: creatinine ratio	▮	3

Target values for albumin are obtained by LC-MS/MS after trypsin digestion, performed by the Renal Testing Laboratory, Mayo Clinic, Rochester, MN, using calibration materials prepared from human serum albumin (>99% pure).

Other analytes will be compared by peer group for harmonization purposes.

Program Information

- Three 5.0-mL human urine specimens
- Two shipments per year

Creatinine Accuracy Calibration Verification/Linearity LN24

Analyte	Program Code	
	LN24	LN24 Target Range
Creatinine	▮	0.6–4.0 mg/dL
Estimated glomerular filtration rate (eGFR)	▮	

LN Express service is available.

Program Information
- Six 1.0-mL human serum specimens
- Two shipments per year

Additional Information

The College of American Pathologists (CAP) and the National Kidney Disease Education Program (NKDEP) have an initiative to harmonize clinically reported creatinine values. This initiative is analogous to what the federal health agencies and the clinical laboratory community did to improve the accuracy of cholesterol and glycohemoglobin testing.

Harmonized Thyroid ABTH

Analyte	Program Code	Challenges per Shipment
	ABTH	
T3, free (triiodothyronine, free)	▮	3
T3, total (triiodothyronine, total)	▮	3
T4, free (thyroxine, free)	▮	3
T4, total (thyroxine, total)	▮	3
Thyroid-stimulating hormone (TSH)	▮	3

Program Information
- Three 1.0-mL frozen human specimens
- Two shipments per year

Additional Information
- Analytes will be evaluated using harmonization.
- Specimens are collected by a modified application of Clinical Laboratory and Standards Institute Guideline CLSI C37-A, *Preparation and Validation of Commutable Frozen Human Serum Pools as Secondary Reference Materials for Cholesterol Measurement Procedures; Approved Guideline.*

Hemoglobin A_{1c} Accuracy Calibration Verification/Linearity LN15

Analyte	Program Code	
	LN15	LN15 Target Range
Hemoglobin A_{1c}	▮	5%–12%

CAP-assigned target values derived from Hemoglobin A_{1c} measurements assayed by National Glycohemoglobin Standardization Program (NGSP) secondary reference laboratories.

LN Express service is available.

Program Information
- Six 0.8-mL liquid human whole blood specimens
- Two shipments per year

Hemoglobin A_{1c} GH2, GH5

Analyte	Challenges per Shipment	
	Program Code	
	GH2	GH5
Hemoglobin A_{1c}	3	5

Additional Information

- These Surveys will be evaluated against the National Glycohemoglobin Standardization Program (NGSP) reference method.
- The College of American Pathologists Accreditation Program requires all accredited laboratories performing non-waived testing for Hemoglobin A_{1c} to complete 15 PT challenges per year.
- For second instrument reporting options, see the Quality Cross Check program, GHQ, on page 63.

Program Information

- GH2 - Three 0.8-mL liquid human whole blood specimens; two shipments per year
- GH5 - Five 0.8-mL liquid human whole blood specimens; three shipments per year

NEW

Accuracy-Based Glucose, Insulin, and C-Peptide ABGIC

Analyte	Program Code	Challenges per Shipment
	ABGIC	
C-peptide	▮	3
Glucose	▮	3
Insulin	▮	3

Program Information

- Three 1.0-mL serum specimens
- Two shipments per year

Body Fluids Benchtop Reference Guide (BFBRG)

- Thirty-six color images, including common and rare cells, crystals, and other cell inclusions
- Detailed descriptions of each cell including facts, cell morphology and inclusions
- Nine tabbed sections for easy reference
  - Erythroid Series
  - Lymphoid Series
  - Myeloid Series
  - Mononuclear Phagocytic Series
  - Lining Cells
  - Miscellaneous Cells
  - Crystals
  - Microorganisms
  - Miscellaneous Findings
- A durable and water-resistant format to withstand years of benchtop use—5” x 6½”

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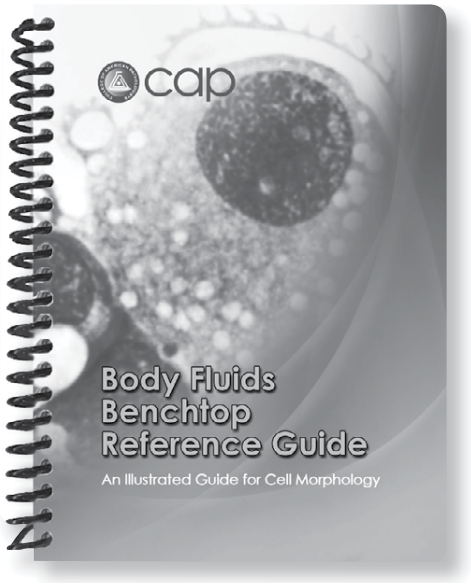


Item number: BFBRG
Spiral bound; 42 pages;
36 images; 2013

Validated Materials

Improve the reliability of your patient results with CAP Survey Validated Materials

Use the same material that is sent in the Surveys program to:

- Identify and troubleshoot instrument/method problems
- Correlate results with other laboratories or instruments
- Document correction of problems identified in Surveys
- Utilize material with confirmed results as an alternative external quality control
- Identify potential proficiency testing failures

Each laboratory receives a Survey Participant Summary, which includes readily available results.

Chemistry, Validated Materials

Validated Material	Validated Material Code	Corresponding Survey	Page
Chemistry and Therapeutic Drugs	CZVM	CZ	56-58
Cerebrospinal Fluid	MVM	M	74
Urine Chemistry—General	UVM	U	68

Coagulation—Limited, Validated Material

Validated Material	Validated Material Code	Corresponding Survey	Page
Coagulation—Limited	CGM	CGL	160

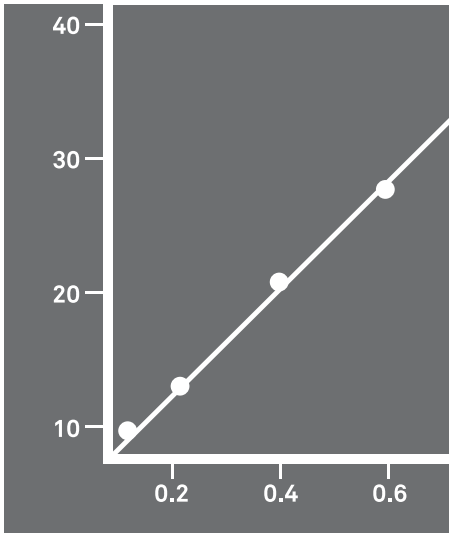
Endocrinology, Validated Materials

Validated Material	Validated Material Code	Corresponding Survey	Page
Ligand—General	KVM	K	82
Ligand—Special	YVM	Y	84

Toxicology, Validated Material

Validated Material	Validated Material Code	Corresponding Survey	Page
Urine Drug Testing, Screen	UDSM	UDS	98

11 Instrumentation Validation Tools



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- Large peer groups—Maximize confidence in your calibration verification results.
- Customized report package—Let our team of biostatisticians perform the statistical analysis of your results so you do not have to.
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Instrumentation Validation Tools

New Programs NEW

Program Changes

Calibration Verification/Linearity

The CAP CVL program

The CAP is your trusted calibration verification and linearity partner. Our CVL program will help you meet both CLIA regulations and CAP Laboratory Accreditation Program requirements for calibration and analytical measurement range verification under 42 CFR493.1255(bX3). Do not let instrument problems impact your patient results; use the calibration verification and linearity studies to ensure your instrument and method are performing to their optimal levels.

With your enrollment in the CAP CVL program you will receive:

- **Testing Kit**
  - Kit instructions—Contain important information to help you complete testing and accurately report your results
  - Result form
  - Specimens—The majority of CAP CVL programs offer human-based materials to closely mimic your patient results
- **Customized Report Package**
  - Executive Summary—A quick overview of both your calibration verification and linearity results for all reported analytes
  - Calibration Verification Evaluation
  - Linearity Evaluation
    - Rapid result turnaround is complimentary for most CVL programs with LN Express™. View your linearity evaluations within two business days by logging into e-LAB Solutions Suite.
  - Linearity Troubleshooting Report
  - Participant Summary—A summary of laboratory performance that includes peer group statistics and enhanced diagnostic information for early insight into potential problems
- **Additional Tools**
  - Calibration Verification/Linearity Program User's Guide—Get assistance in interpreting your evaluations and reports as well as helpful troubleshooting information with suggested actions. Also available online by logging in to e-LAB Solutions Suite
  - Calibration Verification Troubleshooting Guide—The guide provides suggested actions if you receive a calibration verification result of Different, or if your evaluation result is Verified over a range that does not include all of your reported results
  - Calibration Verification/Linearity Surveys Investigation Checklist for Problematic Results—Interpretative checklists are included to help with troubleshooting and documentation

Your Total Calibration Verification/Linearity (CVL) Solution

CVL Program	Page No.	Corresponding Proficiency Testing Survey	Page No.
LN2 - Chemistry, Lipid, Enzyme CVL	120	C1, C3/C3X, C4, CZ/CZX/CZ2X	56-58
LN2BV - Chemistry, Lipid, Enzyme all Beckman (except AU), Vitros CVL	120		
LN3 - Therapeutic Drug Monitoring CVL	121	CZ/CZX/CZ2X/Z	56-58
LN5 - Ligand CVL	121-122	K/KK	82
LN5S - Ligand all Siemens ADVIA (Centaur, CP, and XP) CVL	121-122		
LN6 - Urine Chemistry CVL	122	U	68
LN7 - Immunology CVL	123	IG/IGX	206
LN8 - Reproductive Endocrinology CVL	123	Y/YY	84
LN9 - Hematology CVL	123	FH series, HE series	136
LN11 - Serum Ethanol CVL	124	AL2	101
LN12 - C-Reactive Protein CVL	124	CRP	206
LN12E - C-Reactive Protein, Extended CVL	124		
LN13, LN13C - Blood Gas/Critical Care CVL	124-125	AQ, AQ2, AQ3, AQ4	92
LN15 - Hemoglobin A_{1c} Accuracy CVL	125	GH2, GH5	63
LN16 - Homocysteine CVL	125	HMS	64
LN17 - Whole Blood Glucose CVL	125		
LN18, LN19 - Reticulocyte CVL	126	RT, RT2, RT3, RT4	142
LN20 - Urine Albumin CVL	126	U	68
LN21 - High-Sensitivity C-Reactive Protein CVL	126	HSCRP	64
LN22 - Flow Cytometry CVL	126	FL	213
LN23 - Prostate-Specific Antigen CVL	127	K/KK	82
LN24 - Creatinine Accuracy CVL	127	C1, C3/C3X, C4, CZ/CZX/CZ2X	56-58
LN25, LN27 - Troponin I and T CVL	127	CRT, CRTI, TNT	62
LN30 - B-Type Natriuretic Peptides CVL	127	BNP	61
LN31 - Immunosuppressive Drugs CVL	128	CS	59
LN32 - Ammonia CVL	128	C1, C3/C3X, CZ/CZX/CZ2X	56-58
LN33 - Serum Myoglobin CVL	128	CRT, CRTI	62
LN34 - Tumor Markers CVL	128	TM/TMX	89
LN35 - Thrombophilia CVL	129	CGS2	162
LN36 - Heparin CVL	129	CGS4	162
LN37 - von Willebrand Factor Antigen CVL	129	CGS3	162
LN38 - CMV Viral Load CVL	129	VLS, VLS2	199
LN39 - HIV Viral Load CVL	129	HIVG, HV2	199
LN40 - Vitamin D CVL	129	VITD	84
LN41 - Procalcitonin CVL	130	PCT	77
LN42 - D-Dimer CVL	130	CGL, CGDF	160
LN43 - Lamellar Body Count CVL	130	LBC	151
LN44 - Fibrinogen CVL	130	CGL	160
LN45 - HCV Viral Load CVL	129	HCV2	198
LN46 - C-Peptide/Insulin CVL	130	ING	86

All CVL Surveys provide individual evaluation reports by analytes, an Executive Summary, and graphical plots for linearity and calibration verification.

Chemistry, Lipid, Enzyme Calibration Verification/Linearity LN2, LN2BV

Analyte	Program Code	LN2	LN2BV		Units
	LN2, LN2BV	(All Instruments)	All Beckman (except AU)	Vitros	
Albumin	▮	1.5–9.0			g/dL
Calcium	▮	4.0–18.0			mg/dL
Chloride	▮	60–180			mmol/L
CO_2	▮	7–40			mmol/L
Creatinine	▮	0.3–32.0			mg/dL
Glucose	▮	20–780			mg/dL
Iron	▮	10–950			µg/dL
Magnesium	▮	0.3–10.0			mg/dL
Osmolality	▮	200–600			mOsm/kg H_2O
Phosphorus	▮	0.5–20.0			mg/dL
Potassium	▮	1.5–13.0			mmol/L
Protein	▮	1.5–10.0			g/dL
Sodium	▮	90–215			mmol/L
Urea nitrogen/Urea	▮	3–190			mg/dL
Uric acid	▮	1–25			mg/dL
Alkaline phosphatase	▮	25–1,800	25–1,000	25–1,100	U/L
ALT (SGPT)	▮	10–900	10–650	30–700	U/L
Amylase	▮	30–1,800	30–900	30–800	U/L
AST (SGOT)	▮	10–900	10–500	10–700	U/L
Creatine kinase	▮	25–2,000	25–1,200	25–700	U/L
CK-2 (MB) Mass	▮	1–250	1–300	1–200	ng/mL
Gamma glutamyl transferase	▮	10–1,400	10–900	10–1,100	U/L
Lactate dehydrogenase	▮	50–1,800	50–700	185–3,000	U/L
Lipase	▮	20–1,400	20–190	150–2,500	U/L
Bilirubin, direct	▮	0.1–10.0			mg/dL
Bilirubin, total	▮	0.2–25.0			mg/dL
Cholesterol	▮	35–625			mg/dL
HDL	▮	7–120			mg/dL
Triglycerides	▮	20–700			mg/dL

LN Express service is available.

Program Information

- Seven 5.0-mL liquid serum specimens for basic chemistry, six 3.0-mL liquid serum specimens for direct and total bilirubin, seven 2.0-mL liquid serum specimens for lipids, and seven 5.0-mL liquid serum specimens for enzymes
- LN2 – Appropriate for most major instruments
- LN2BV – Appropriate for Beckman (except AU) and Vitros instruments only
- Two shipments per year

Please note that the ranges listed are an estimate of the values recovered. Some instruments may recover lower or higher values than the ranges listed.

Therapeutic Drug Monitoring Calibration Verification/Linearity LN3

Analyte	Program Code	
	LN3	LN3 Target Ranges
Acetaminophen	▮	20–450 µg/mL
Amikacin	▮	2–45 µg/mL
Carbamazepine	▮	2–18 µg/mL
Digoxin	▮	0.5–4.4 ng/mL
Gentamicin	▮	1–11 µg/mL
Lidocaine	▮	1–10 µg/mL
Lithium	▮	0.3–4.0 mmol/L
N-acetylprocainamide (NAPA)	▮	2–25 µg/mL
Phenobarbital	▮	8–70 µg/mL
Phenytoin	▮	5–35 µg/mL
Primidone	▮	1–22 µg/mL
Procainamide	▮	2–18 µg/mL
Quinidine	▮	0.4–7.0 µg/mL
Salicylate	▮	7–90 mg/dL
Theophylline	▮	5–35 µg/mL
Tobramycin	▮	1–12 µg/mL
Valproic acid	▮	15–140 µg/mL
Vancomycin	▮	7–90 µg/mL

LN Express service is available.

Program Information

- Six 4.0-mL liquid serum specimens
- A seventh 4.0-mL liquid serum specimen for acetaminophen and vancomycin
- Two shipments per year

Ligand Calibration Verification/Linearity LN5, LN5S

Analyte	Program Code	Target Ranges	
	LN5, LN5S*	LN5 Target Ranges	LN5S Target Ranges
AFP	▮	1.0–900.0 ng/mL	
CEA	▮	0.5–750.0 ng/mL	0.6–90.0 ng/mL
Cortisol	▮	1–65 µg/dL	
Ferritin	▮	2–1,100 ng/mL	
Folate	▮	1.3–20 ng/mL	
Human chorionic gonadotropin (hCG)	▮	5–14,000 mIU/mL	
T3, total (triidothyronine)	▮	0.5–7.0 ng/mL	
T4, total (thyroxine)	▮	1–80 µg/dL	

Continued on the next page

Program Information

- LN5 - Eight 4.0-mL liquid serum specimens; appropriate for most major instruments except Siemens ADVIA Centaur, XP, and CP users
- LN5S - Thirteen 4.0-mL liquid serum specimens; appropriate for Siemens ADVIA Centaur, XP, and CP users
- Two shipments per year

Please note that the ranges listed are an estimate of the values recovered. Some instruments may recover lower or higher values than the ranges listed.

Ligand Calibration Verification/Linearity
LN5, LN5S continued

Analyte	Program Code	Target Ranges	
	LN5, LN5S*	LN5 Target Ranges	LN5S Target Ranges
Thyroid-stimulating hormone (TSH)	▮	0.01–100 µIU/mL	
Vitamin B_{12}	▮	100–2,200 pg/mL	

*The LN5S CVL will allow Siemens ADVIA Centaur users to report other major instruments for analytes other than CEA, if needed.

LN Express service is available.

Program Information

- LN5 - Eight 4.0-mL liquid serum specimens; appropriate for most major instruments except Siemens ADVIA Centaur, XP, and CP users
- LN5S - Thirteen 4.0-mL liquid serum specimens; appropriate for Siemens ADVIA Centaur, XP, and CP users
- Two shipments per year

Urine Chemistry Calibration Verification/Linearity LN6

Analyte	Program Code	
	LN6	LN6 Target Ranges
Amylase	▮	40–1,500 U/L
Calcium	▮	5–30 mg/dL
Chloride	▮	20–330 mmol/L
Creatinine	▮	20–460 mg/dL
Glucose	▮	25–640 mg/dL
Osmolality	▮	30–1,800 mOsm/kg H_20
Phosphorus	▮	15–200 mg/dL
Potassium	▮	7–225 mmol/L
Protein, total	▮	10–235 mg/dL
Sodium	▮	20–340 mmol/L
Urea nitrogen/Urea	▮	20–2,000 mg/dL
Uric acid	▮	6–150 mg/dL

LN Express service is available.

Program Information

- Eighteen 4.0-mL liquid simulated urine specimens
- Two shipments per year

Please note that the ranges listed are an estimate of the values recovered. Some instruments may recover lower or higher values than the ranges listed.

Immunology Calibration Verification/Linearity LN7

Analyte	Program Code	
	LN7	LN7 Target Ranges
Alpha-1-antitrypsin	▮	25–616 mg/dL
Complement C3	▮	21–420 mg/dL
Complement C4	▮	5–100 mg/dL
IgA	▮	32–650 mg/dL
IgG	▮	150–3,000 mg/dL
IgM	▮	25–450 mg/dL
Transferrin	▮	38–950 mg/dL

LN Express service is available.

Program Information
- Six 2.0-mL liquid serum specimens
- Two shipments per year

Reproductive Endocrinology Calibration Verification/Linearity LN8

Analyte	Program Code	
	LN8	LN8 Target Ranges
Estradiol	▮	25–4,500 pg/mL
Follicle-stimulating hormone (FSH)	▮	3–190 mIU/mL
Human chorionic gonadotropin (hCG)	▮	5–8,000 mIU/mL
Luteinizing hormone (LH)	▮	2–190 mIU/mL
Progesterone	▮	1–50 ng/mL
Prolactin	▮	3–315 ng/mL
Testosterone	▮	20–1,500 ng/dL

LN Express service is available.

Program Information
- Seven 4.0-mL liquid serum specimens
- Two shipments per year

Hematology Calibration Verification/Linearity LN9

Analyte	Program Code	
	LN9	LN9 Target Ranges
Hemoglobin	▮	1.0–22.5 g/dL
Platelet count	▮	10–4,500 x 10^9/L
RBC count	▮	0.3–7.5 x 10^{12}/L
WBC count	▮	0.5–350.0 x 10^9/L

LN Express service is available.

Program Information
- Twenty 3.0-mL liquid specimens
- Two shipments per year

Please note that the ranges listed are an estimate of the values recovered. Some instruments may recover lower or higher values than the ranges listed.

Serum Ethanol Calibration Verification/Linearity LN11

Analyte	Program Code	
	LN11	LN11 Target Range
Serum ethanol	▮	15–550 mg/dL

LN Express service is available.

Program Information
- Seven 3.0-mL liquid serum specimens
- Two shipments per year

C-Reactive Protein; C-Reactive Protein, Extended Calibration Verification/Linearity LN12, LN12E

Analyte	Program Code		Program Code	
	LN12	LN12 Target Range	LN12E	LN12E Target Range
C-reactive protein	▮	5–110 mg/L	▮	6–320 mg/L

LN Express service is available.

Not appropriate for reporting high-sensitivity C-reactive protein (hsCRP). For reporting hsCRP, use LN21 on page 126.

Program Information
- LN12 - Five 1.0-mL liquid serum specimens; appropriate for Beckman Immage, Siemens Dimension, and Vitros instruments
- LN12E - Six 1.0-mL liquid serum specimens; appropriate for Abbott Architect, Beckman (except Immage), Roche, and Siemens (except Dimension) instruments
- Select program based on appropriate target range for assay used
- Two shipments per year

Blood Gas/Critical Care Calibration Verification/Linearity LN13, LN13C

Analyte	Program Code		Program Code	
	LN13	LN13 Target Ranges	LN13C	LN13C Target Ranges
PCO_2	▮	12–91 mm Hg	▮	12–91 mm Hg
pH	▮	6.83–7.82	▮	6.83–7.82
PO_2	▮	18–490 mm Hg	▮	18–490 mm Hg
Calcium, ionized			▮	0.15–3.3 mmol/L
Chloride			▮	62–148 mmol/L
Glucose			▮	10–465 mg/dL
Lactate			▮	0.2–18 mmol/L

Continued on the next page

Program Information
- Ten 2.5-mL ampules of aqueous specimens
- Two shipments per year

Please note that the ranges listed are an estimate of the values recovered. Some instruments may recover lower or higher values than the ranges listed.

Blood Gas/Critical Care Calibration Verification/Linearity LN13, LN13C continued

Analyte	Program Code		Program Code	
	LN13	LN13 Target Ranges	LN13C	LN13C Target Ranges
Potassium			▮	0.5–10.7 mmol/L
Sodium			▮	83–172 mmol/L

Program Information
- Ten 2.5-mL ampules of aqueous specimens
- Two shipments per year

Hemoglobin A_{1c} Accuracy Calibration Verification/Linearity LN15

Analyte	Program Code	
	LN15	LN15 Target Range
Hemoglobin A_{1c}	▮	5%–12%

CAP-assigned target values derived from Hemoglobin A_{1c} measurements assayed by National Glycohemoglobin Standardization Program (NGSP) secondary reference laboratories.

LN Express service is available.

Program Information
- Six 0.8-mL liquid human whole blood specimens
- Two shipments per year

Homocysteine Calibration Verification/Linearity LN16

Analyte	Program Code	
	LN16	LN16 Target Range
Homocysteine	▮	5–65 µmol/L

LN Express service is available.

Program Information
- Six 1.0-mL liquid serum specimens
- Two shipments per year

Whole Blood Glucose Calibration Verification/Linearity LN17

Analyte	Program Code	
	LN17	LN17 Target Range
Whole blood glucose	▮	50–400 mg/dL

LN Express service is available.

Program Information
- Five 2.0-mL liquid whole blood specimens
- Report up to 10 different ancillary testing sites or instruments
- Two shipments per year

Please note that the ranges listed are an estimate of the values recovered. Some instruments may recover lower or higher values than the ranges listed.

Reticulocyte Calibration Verification/Linearity LN18, LN19

Instrument/Method	Program Code		Program Code	
	LN18	LN18 Target Range	LN19	LN19 Target Range
Coulter Gen•S™, LH 500, LH 700 series, and UniCel DxH			∎	0.3%–27.0%
All other instruments	∎	0.3%–24.0%		

LN Express service is available.

Program Information
- LN18 - Five 2.5-mL liquid whole blood specimens with pierceable caps
- LN19 - Five 3.0-mL liquid whole blood cell specimens with pierceable caps
- Two shipments per year

Urine Albumin Calibration Verification/Linearity LN20

Analyte	Program Code	
	LN20	LN20 Target Ranges
Urine albumin	∎	10–350 mg/L
Urine creatinine	∎	20–500 mg/dL

Program Information
- Six 5.0-mL urine specimens
- Two shipments per year

High-Sensitivity C-Reactive Protein Calibration Verification/Linearity LN21

Analyte	Program Code	
	LN21	LN21 Target Range
High-sensitivity C-reactive protein	∎	0.5–18.0 mg/L

LN Express service is available.

Program Information
- Six 1.0-mL liquid serum specimens
- For high-sensitivity methods only
- Two shipments per year

Flow Cytometry Calibration Verification/Linearity LN22

Analyte	Program Code	
	LN22	LN22 Target Ranges
CD3+	∎	50%–70% positive
CD3+ T lymphocytes absolute	∎	350–4,000 cells/µL
CD3+/CD4+	∎	1%–40% positive
CD3+/CD4+ T lymphocytes absolute	∎	6–2,000 cells/µL
CD3+/CD8+	∎	25%–40% positive
CD3+/CD8+ T lymphocytes absolute	∎	250–1,600 cells/µL

Program Information
- Seven 1.0-mL liquid whole blood specimens
- Two shipments per year

Please note that the ranges listed are an estimate of the values recovered. Some instruments may recover lower or higher values than the ranges listed.

Prostate-Specific Antigen Calibration Verification/Linearity LN23

Analyte	Program Code	
	LN23	LN23 Target Range
Prostate-specific antigen	▮	0.1–90.0 ng/mL

Program Information
- Twelve 1.0-mL liquid serum specimens
- Two shipments per year

Creatinine Accuracy Calibration Verification/Linearity LN24

Analyte	Program Code	
	LN24	LN24 Target Range
Creatinine	▮	0.6–4.0 mg/dL
Estimated glomerular filtration rate (eGFR)	▮	

LN Express service is available.

Program Information
- Six 1.0-mL human serum specimens
- Two shipments per year

Additional Information

The College of American Pathologists (CAP) and the National Kidney Disease Education Program (NKDEP) have an initiative to harmonize clinically reported creatinine values. This initiative is analogous to what the federal health agencies and the clinical laboratory community did to improve the accuracy of cholesterol and glycohemoglobin testing.

Troponin Calibration Verification/Linearity LN25, LN27

Analyte	Program Code		Program Code	
	LN25	LN25 Target Range	LN27	LN27 Target Range
Troponin I	▮	0.05–60.00 ng/mL		
Troponin T			▮	0.1–27.00 ng/mL

Program Information
- LN25 - Seven 2.0-mL liquid serum specimens
- LN27 - Six 2.0-mL liquid serum specimens
- Two shipments per year

B-Type Natriuretic Peptides Calibration Verification/Linearity LN30

Analyte	Program Code	
	LN30	LN30 Target Ranges
BNP	▮	30–6,500 pg/mL
NT-proBNP	▮	50–50,000 pg/mL

LN Express service is available.

Program Information
- Seven 1.0-mL liquid plasma specimens
- Two shipments per year

Please note that the ranges listed are an estimate of the values recovered. Some instruments may recover lower or higher values than the ranges listed.

Immunosuppressive Drugs Calibration Verification/Linearity LN31

Analyte	Program Code	
	LN31	LN31 Target Ranges
Cyclosporine	▮	60–1,200 ng/mL
Tacrolimus	▮	1.5–30.0 ng/mL

Program Information
- Seven 2.0-mL liquid whole blood hemolysate specimens
- Two shipments per year

Ammonia Calibration Verification/Linearity LN32

Analyte	Program Code	
	LN32	LN32 Target Range
Ammonia	▮	13–900 µmol/L

LN Express service is available.

Program Information
- Seven 2.0-mL aqueous specimens
- Two shipments per year

Serum Myoglobin Calibration Verification/Linearity LN33

Analyte	Program Code	
	LN33	LN33 Target Range
Myoglobin	▮	25–900 ng/mL

LN Express service is available.

Program Information
- Seven 1.0-mL liquid serum specimens
- Two shipments per year

Tumor Markers Calibration Verification/Linearity LN34

Analyte	Program Code	
	LN34	LN34 Target Ranges
CA 125	▮	1–1,000 U/mL
CA 15-3	▮	2–190 U/mL
CA 19-9	▮	10–900 U/mL

LN Express service is available.

Program Information
- Seven 3.0-mL liquid serum specimens
- Two shipments per year

Please note that the ranges listed are an estimate of the values recovered. Some instruments may recover lower or higher values than the ranges listed.

Coagulation Calibration Verification/Linearity LN35, LN36, LN37

Analyte	Program Code			
	LN35	LN36	LN37	Target Ranges
Antithrombin activity	▮			10%–130%
Protein C activity	▮			10%–100%
Heparin, low molecular weight		▮		0.1–2.0 U/mL
Heparin, unfractionated		▮		0.1–1.3 U/mL
von Willebrand factor antigen			▮	5%–140%

The LN35, LN36, and LN37 CVL programs meet the CAP Accreditation requirements HEM.38009, 38010, and 38011.

LN Express service is available.

Program Information

- LN35, LN37 - Six 1.0-mL frozen plasma specimens per mailing
- LN36 - Twelve 1.0-mL frozen plasma specimens per mailing, which include six for low molecular weight heparin and six for unfractionated heparin
- Two shipments per year; ships on dry ice

Viral Load Calibration Verification/Linearity LN38, LN39, LN45

Analyte	Program Code			
	LN38*	LN39	LN45	Target Ranges
CMV viral load	▮			316–1.0M IU/mL
HIV viral load		▮		50–5.0M IU/mL
HCV viral load			▮	50–280M IU/mL

*The biohazard warning applies to Survey LN38.

LN Express service is available.

Program Information

- LN38 - Six 1.5-mL frozen plasma specimens
- Two shipments per year; ships on dry ice

- LN39 - Six 2.5-mL plasma specimens
- LN45 - Seven 2.5-mL frozen DNA specimens
- Two shipments per year; ships on dry ice (dry ice does not apply to LN39)

Vitamin D Calibration Verification/Linearity LN40

Analyte	Program Code	
	LN40	Target Range
25-OH vitamin D, total	▮	4–140 ng/mL

LN Express service is available.

Program Information

- Six 1.0-mL serum specimens
- Two shipments per year

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Please note that the ranges listed are an estimate of the values recovered. Some instruments may recover lower or higher values than the ranges listed.

Procalcitonin Calibration Verification/Linearity LN41

Analyte	Program Code	
	LN41	Target Range
Procalcitonin	▮	0.3–190 ng/mL

LN Express service is available.

Program Information
- Six 1.0-mL frozen serum specimens
- Two shipments per year; ships on dry ice

D-Dimer Calibration Verification/Linearity LN42

Analyte	Program Code	
	LN42	Target Range
D-dimer	▮	220–5,500 ng/mL FEU

LN Express service is available.

Program Information
- Six 1.0-mL plasma specimens
- Two shipments per year

Lamellar Body Count Calibration Verification/Linearity LN43

Analyte	Program Code	
	LN43	Target Range
Lamellar body count	▮	5–200 particles x 10^9/L

LN Express service is available.

Program Information
- Six 2.0-mL simulated liquid amniotic fluid specimens
- For use with lamellar body count methods performed on hematology analyzers
- Two shipments per year

Fibrinogen Calibration Verification/Linearity LN44

Analyte	Program Code	
	LN44	Target Range
Fibrinogen	▮	80–900 mg/dL

LN Express service is available.

Program Information
- Six 1.0-mL frozen plasma specimens
- Two shipments per year; ships on dry ice

NEW

C-Peptide/Insulin Calibration Verification/Linearity LN46

Analyte	Program Code	
	LN46	LN46 Target Ranges
C-Peptide	▮	0.1–35.0 ng/mL
Insulin	▮	0.8–800 µIU/mL

Program Information
- Seven 2-mL frozen serum specimens
- Two shipments per year

Please note that the ranges listed are an estimate of the values recovered. Some instruments may recover lower or higher values than the ranges listed.

Instructions Quality Management Programs

Instrumentation I

Challenges	Program Code		
	I		
	A Shipment	B Shipment	C Shipment
Adjustable micropipette calibration verification/linearity	▮		▮
Analytical balance check	▮		▮
Gravimetric pipette calibration	▮		▮
Microtiter plate linearity	▮		▮
Refractometer calibration	▮		▮
Spectrophotometer (stray light check)	▮		▮
Absorbance check – UV wavelength		▮	
Fluorescent intensity check – fluorescent microscopes		▮	
Ocular micrometer calibration		▮	
Osmometer study		▮	
Peak absorbance measurement		▮	
pH meter check		▮	
Photometric calibration – visible wavelength		▮	

WARNING: The Instrumentation (I) Survey specimens may contain corrosive or toxic substances, environmental hazards, or irritants.

Program Information

- Designed to assess instruments not routinely challenged during the proficiency testing process
- Includes appropriate materials to assess important functional parameters, including accuracy and linearity
- Three shipments per year

Interfering Substance IFS

Analyte	Program Code		
	IFS		
	Bilirubin Interferent	Hemoglobin Interferent	Lipid Interferent
Alanine aminotransferase (ALT/SGPT)	▮	▮	▮
Albumin	▮	▮	▮
Alkaline phosphatase	▮	▮	▮
Amylase	▮	▮	▮
Aspartate aminotransferase (AST/SGOT)	▮	▮	▮
Calcium	▮	▮	▮
Chloride	▮	▮	▮
CK2 (MB) mass	▮	▮	▮
Creatine kinase (CK)	▮	▮	▮
Creatinine	▮	▮	▮
Gamma glutamyl transferase (GGT)	▮	▮	▮
Glucose	▮	▮	▮
Iron	▮	▮	▮
Lactate dehydrogenase (LD)	▮	▮	▮
Lipase	▮	▮	▮
Magnesium	▮	▮	▮
Osmolality	▮	▮	▮
Phosphorus	▮	▮	▮
Potassium	▮	▮	▮
Protein, total	▮	▮	▮
Sodium	▮	▮	▮
Urea nitrogen (BUN)	▮	▮	▮
Uric acid	▮	▮	▮

The material expires December 1, 2019.

Program Information

- Eighteen 10.0-mL liquid serum specimens
- Designed for verifiying manufacturing interference specifications and investigating discrepant results caused by interfering substances
- Submit results any time prior to the material's expiration date
- One shipment per year

Serum Carryover SCO

Analyte	Program Code
	SCO
Creatinine	▮
hCG	▮
Lactate dehydrogenase (LD)	▮
Phenytoin	▮

Program Information

- One 10.0-mL liquid serum specimen (low level) and one 5.0-mL liquid serum specimen (high level)
- Designed to screen for instrument sample probe carryover
- One shipment per year

Urine Toxicology Carryover UTCO

Analyte	Program Code
	UTCO
Benzoylecgonine	▮
Delta-9-THC-COOH	▮
Opiates	▮
Amphetamine	▮

Program Information

- Two 40.0-mL urine specimens (low and high levels)
- Designed to screen for instrument sample probe carryover
- One shipment per year

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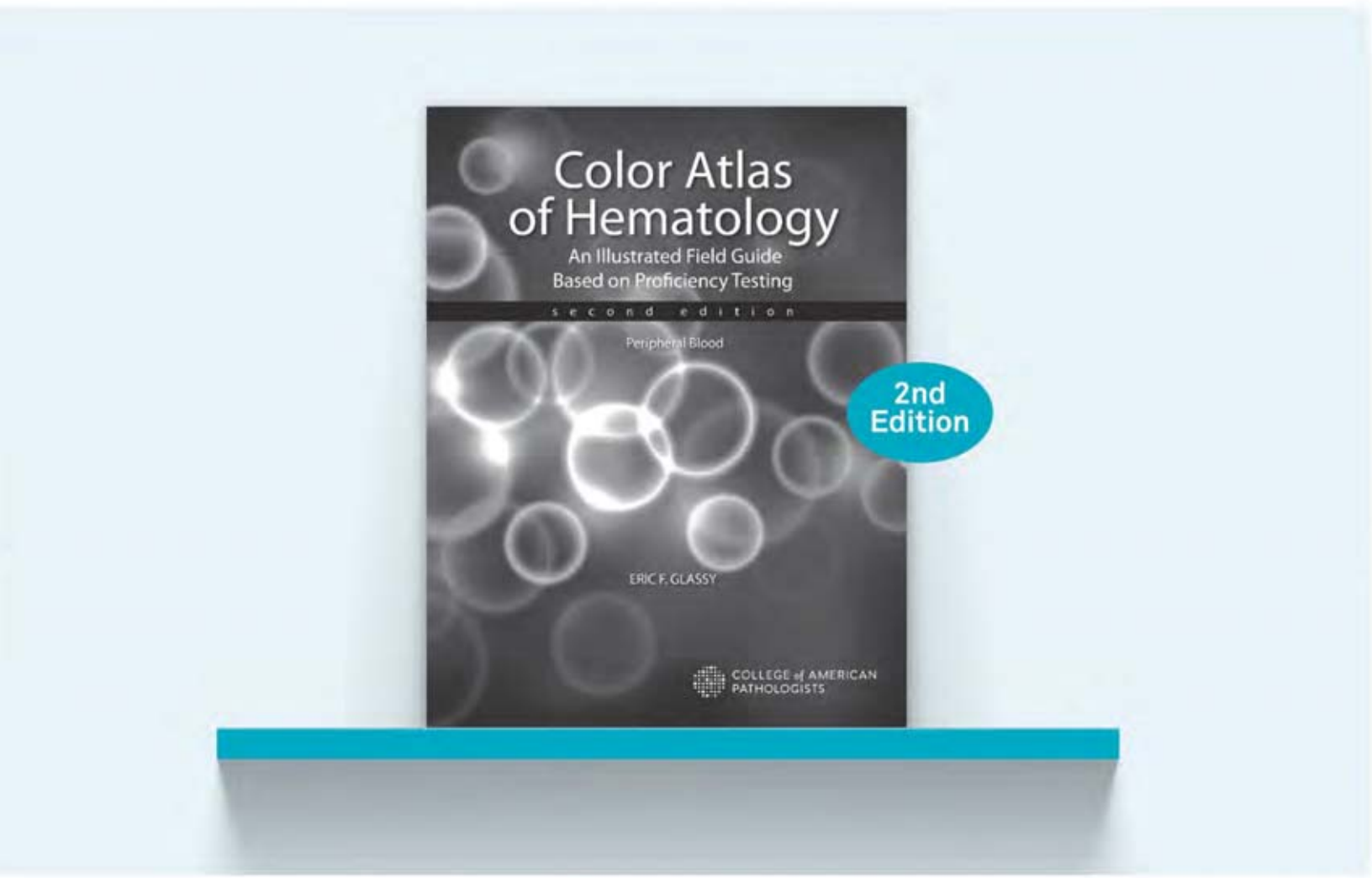

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New Programs NEW

Hematology

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Hematology—Basic HE, HEP

Analyte/Procedure	Program Code		Challenges per Shipment
	HE	HEP	
Blood cell identification		▮	10
Hematocrit	▮	▮	5
Hemoglobin	▮	▮	5
MCV, MCH, and MCHC	▮	▮	5
MPV	▮	▮	5
Platelet count	▮	▮	5
RDW	▮	▮	5
Red blood cell count	▮	▮	5
White blood cell count	▮	▮	5

Program Information

- HE and HEP - Five 3.0-mL whole blood specimens
- HEP - Ten images, each available as photographs and online images
- Three shipments per year

CE credit

Hematology Automated Differential Series FH1–FH13, FH1P–FH13P

Analyte/Procedure	Program Code				Challenges per Shipment
	FH1-FH10	FH1P-FH10P	FH13	FH13P	
Blood cell identification		▮		▮	10
Hematocrit	▮	▮	▮	▮	5
Hemoglobin	▮	▮	▮	▮	5
Immature granulocyte parameter (IG)	▮	▮			5 (FH9 only)
Immature platelet fraction (IPF)	▮	▮			5 (FH9 only)
Large unstained cell (LUC)	▮	▮			5 (FH4 only)
MCV, MCH, and MCHC	▮	▮	▮	▮	5
MPV	▮	▮	▮	▮	5
Nucleated red blood cell count (nRBC)	▮	▮	▮	▮	5 (FH3, FH9, and FH13)
Platelet count	▮	▮	▮	▮	5
RDW	▮	▮	▮	▮	5
Red blood cell count	▮	▮	▮	▮	5
White blood cell count	▮	▮	▮	▮	5
WBC differential	▮	▮	▮	▮	5

For second instrument reporting options, see the Quality Cross Check programs, FH3Q, FH4Q, FH6Q, and FH9Q, on page 138.

Program Information

- FH1-FH10 and FH1P-FH10P - Five 2.5-mL whole blood specimens with pierceable caps
- FH13 and FH13P - Five 2.0-mL whole blood specimens with pierceable caps
- FHP series - Ten images, each available as photographs and online images
- For method compatibility, see instrument matrix on page 139
- Three shipments per year

CE credit

Hematology Automated Differential FH14, FH14P

NEW

Analyte/Procedure	Program Code		Challenges per Shipment
	FH14	FH14P	
Blood cell identification		▮	10
Hematocrit	▮	▮	5
Hemoglobin	▮	▮	5
Large unclassified cell (LUC), percent and absolute	▮	▮	5
MCV, MCH, and MCHC	▮	▮	5
MPV	▮	▮	5
Nucleated red blood cell count (nRBC), percent and absolute	▮	▮	5
Platelet count	▮	▮	5
RDW	▮	▮	5
Red blood cell count	▮	▮	5
White blood cell count	▮	▮	5
WBC differential	▮	▮	5
Reticulocyte count	▮	▮	3
Reticulocyte count, absolute	▮	▮	3
Reticulocyte hemoglobin (RET-He)	▮	▮	3

Program Information

- FH14 and FH14P - Five 2.5-mL whole blood samples with pierceable caps
- FH14P - Ten images, each available as photographs and online images
- For instrument compatibility, see instrument matrix on page 139
- Three shipments per year

CE credit

Centrifugal Hematology FH15

Analyte/Procedure	Program Code	Challenges per Shipment
	FH15	
Hematocrit	▮	5
Hemoglobin	▮	5
Platelet count	▮	5
WBC count	▮	5
WBC differential (2-part)	▮	5

Program Information

- Five 0.6-mL whole blood specimens
- For use with QBC instruments; not intended for spun hematocrit methods
- Three shipments per year

Quality Cross Check—Hematology Series FH3Q, FH4Q, FH6Q, FH9Q

Analyte/Procedure	Program Code				Challenges per Shipment
	FH3Q	FH4Q	FH6Q	FH9Q	
Hematocrit	▮	▮	▮	▮	3
Hemoglobin	▮	▮	▮	▮	3
Immature granulocyte parameter				▮	3
Immature platelet function (IPF)%				▮	3
Large unstained cells (LUC)		▮			3
MCV, MCH, MCHC	▮	▮	▮	▮	3
MPV	▮	▮	▮	▮	3
Nucleated red blood cell count (nRBC)	▮			▮	3
Platelet count	▮	▮	▮	▮	3
RDW	▮	▮	▮	▮	3
Red blood cell count	▮	▮	▮	▮	3
WBC differential	▮	▮	▮	▮	3
White blood cell count	▮	▮	▮	▮	3

These programs do not meet regulatory requirements for proficiency testing; see the FH Series on page 136. For additional information about the Quality Cross Check program, see page 40.

The Quality Cross Check Program:

- Provides a solution for monitoring performance across multiple instruments, and is in compliance with the CMS directive regarding proficiency testing on multiple instruments.
- Simplifies instrument comparability efforts by providing custom reports with both peer group comparison and instrument comparability statistics.

Program Information

- Three 2.5-mL whole blood specimens with pierceable caps
- Report up to three instruments
- For method compatibility, see instrument matrix on page 139
- Two shipments per year

Test your diagnostic skills as a pathologist with CPIP

Online, hands-on and interactive, the Clinical Pathology Improvement Program (CPIP) enables pathologists to sharpen their diagnostic skills in real time by working through an actual case. Each month, you will receive a new case, including related images and clinical background. As the case unfolds, more information is revealed, just as in the laboratory. Participants who successfully complete the posttest may apply their earned credits to their Continuing Certification (CC), formerly known as Maintenance of Certification (MOC) SAM requirements. Enjoy a full year of CPIP and earn up to 15 CME/SAM credits.

Choose code CPIP/CPIP1 on your Surveys order form.

Hematology Automated Differential Series, Instrument Matrix

Instrument	FH and FHQ Series										
	FH1	FH2	FH3/ FH3Q	FH4/ FH4Q	FH6	FH6Q	FH9/ FH9Q	FH10	FH13	FH14	FH15
Abbott Cell-Dyn® 1200, 1400, 1600, 1700, 1800, Emerald™	▮										
Horiba ABX 9000+, 9018+, 9020+	▮										
Sysmex K-series, KCP-1, KX-21/21N, pocH-100i, XP-series	▮										
CDS/Medonic M-series		▮									
Coulter® AcT™, MD, ONYX™, S880, S-plus V, ST, STKR, T-series		▮									
Drew Scientific DC-18, Drew3, Excell 10/16/18, I-1800,		▮									
Horiba ABX Micros		▮									
Mindray BC - 2800, 3000/3200 series		▮									
Siemens ADVIA® 360		▮									
Abbott Cell-Dyn 3000, 3200, 3500, 3700, 4000, Ruby™, Sapphire™			▮								
Cell-DYN Emerald 22			▮								
Coulter DxH 500			▮								
Drew Scientific Excell 22, 2280			▮								
Orphee Mythic 22 AL, Orphee Mythic 22 OT			▮								
Siemens ADVIA 560			▮								
Siemens ADVIA 120, 120 w/SP1, 2120				▮							
Coulter Gen-S™, HmX, LH500, MAXM™, MAXM A/L, STKS, VCS™					▮	▮					
Sysmex XE-2100, XE-2100C, XE-2100D, XE-2100DC, XE-2100L, XE-5000, XE-Alpha, XE-HST, XN-series, XN-L series, XS-500i, XS-800i, XS-1000i, XS-1000iAL, XS-1000iC, XT-1800i, XT-2000i, XT-4000i, XE-2100D/L (Blood Center)							▮				
Coulter AcT 5 diff (AL, CP, OV)								▮			
DIRUI BF series								▮			
Horiba ABX Pentra 60, 80, 120								▮			
Coulter LH750, LH755, LH780, LH785, Unicel DxH (except DxH500)						▮			▮		
Roche cobas m511										▮	
QBC											▮

Blood Cell Identification, Photographs BCP, BCP2

Procedure	Program Code		Challenges per Shipment
	BCP	BCP2	
Blood cell identification	▮	▮	5
Educational challenge(s)	▮	▮	5 (BCP)/1 (BCP2)

Program Information

- BCP - Ten images, each available as photographs and online images
- BCP2 - Six images, each available as photographs and online images
- Three shipments per year

CE credit

Blood Parasite BP

Procedure	Program Code	Challenges per Shipment
	BP	
Thin/thick blood film sets*	▮	5

*This Survey will include corresponding thick films when available.

Program Information

- Five Giemsa-stained blood film sets, photographs, and/or online images
- A variety of blood parasites, including *Plasmodium, Babesia, Trypanosoma,* and filarial worms
- Three shipments per year

Bone Marrow Cell Differential BMD

Procedure	Program Code	Challenges per Shipment
	BMD	
Bone marrow differential	▮	1
Bone marrow cell identification	▮	5

Additional Information

- Examine an online, whole slide image that includes a manual 500 bone marrow differential count and annotated cells for identification.
- Recognize and integrate problem-solving skills through the use of interpretive questions found throughout the discussion.
- Evaluate cell morphology and identify specific cells in bone marrow.
- See system requirements on page 13.

Program Information

- One online bone marrow aspirate whole slide image that includes five annotated cells for identification
- Powered by DigitalScope® technology
- Two online activities per year; your CAP shipping contact will be notified via email when the activity is available

CE credit

Erythrocyte Sedimentation Rate ESR, ESR1, ESR2, ESR3

Procedure	Program Code				Challenges per Shipment
	ESR	ESR1	ESR2	ESR3	
All methods except the ALCOR, Alifax®, Sedimat 15®, and Sedimat 15 Plus	▮				3
Sedimat 15, Sedimat 15 Plus		▮			3
Alifax			▮		3
ALCOR iSED				▮	3

Program Information

- ESR, ESR1 - Three 6.0-mL whole blood specimens
- ESR2 - Three 3.0-mL simulated whole blood specimens
- ESR3 - Three 3.5-mL whole blood specimens
- Two shipments per year

Fetal Red Cell Detection HBF

Procedure	Program Code	Challenges per Shipment
	HBF	
Kleihauer-Betke and flow cytometry	▮	2
Rosette fetal screen	▮	2
Acid elution whole slide image	▮	1

Program Information

- Two 1.2-mL liquid whole blood specimens
- Not designed for F cell quantitation
- Two online, whole slide images per year with optional grids for cell counting
- Powered by DigitalScope® technology
- Two shipments per year

Hemoglobinopathy HG

Procedure	Program Code	Challenges per Shipment
	HG	
Hemoglobin identification and quantification	▮	4
"Dry lab" educational challenges	▮	2
Hemoglobin A_2 quantitation	▮	4
Hemoglobin F quantitation	▮	1
Sickling test, qualitative	▮	4

Program Information

- Four 0.5-mL stabilized red blood cell specimens
- Two "dry lab" educational challenges (case histories, electrophoresis patterns, and clinical interpretation questions)
- Two shipments per year

Rapid Total White Blood Cell Count RWBC

Procedure	Program Code	Challenges per Shipment
	RWBC	
Rapid total white blood cell count	▮	5

Program Information

- Five 2.0-mL whole blood specimens
- For use with the HemoCue WBC instrument
- Three shipments per year

Reticulocyte Series RT, RT2, RT3, RT4

Instrument/Method	Program Code				Challenges per Shipment
	RT	RT2	RT3	RT4	
Abbott Cell-Dyn 4000, Sapphire, Siemens ADVIA 120/2120, and all other automated and manual methods	▮				3
Abbott Cell-Dyn 3200, 3500, 3700, Ruby		▮			3
Coulter GenS, HmX, LH500, LH700 series, MAXM, STKS, Unicel DxH			▮		3
Sysmex XE-2100, XE-2100C, XE-2100D, XE-2100DC, XE-2100L, XE-5000, XN series, XT-2000i, XT-4000i				▮	3
Pierceable caps			▮	▮	3

Program Information

- RT, RT2 - Three 1.0-mL stabilized red blood cell specimens
- RT3 - Three 3.0-mL stabilized red blood cell specimens
- RT4 - Three 2.0-mL stabilized red blood cell specimens
- Includes percentage and absolute result reporting
- Two shipments per year

Quality Cross Check—Reticulocyte RTQ, RT3Q, RT4Q

Instrument/Method	Program Code			Challenges per Shipment
	RTQ	RT3Q	RT4Q	
Abbott Cell-Dyn 4000, Sapphire, Siemens ADVIA 120/2120, and all other automated and manual methods	▮			3
Coulter GenS, HmX, LH500, LH700 series, MAXM, STKS, Unicel DxH		▮		3
Sysmex XE-2100, XE-2100C, XE-2100D, XE-2100L, XE-5000, XN Series, XT-2000i, XT-4000i			▮	3

These programs do not meet regulatory requirements for proficiency testing; see the RT Series above. For additional information about the Quality Cross Check program, see page 40.

Program Information

- RTQ - Three 1.0-mL stabilized red blood cell specimens
- RT3Q - Three 3.0-mL stabilized red blood cell specimens
- RT4Q - Three 2.0-mL stabilized red blood cell specimens
- Includes percentage and absolute result reporting
- Report up to three instruments
- Two shipments per year

The Quality Cross Check Program:

- Provides a solution for monitoring performance across multiple instruments, and is in compliance with the CMS directive regarding proficiency testing on multiple instruments.
- Simplifies instrument comparability efforts by providing custom reports with both peer group comparison and instrument comparability statistics.

Sickle Cell Screening SCS

Procedure	Program Code	Challenges per Shipment
	SCS	
Sickling test, qualitative	▮	3

Program Information

- Three 1.0-mL stabilized human erythrocyte specimens
- Two shipments per year

Transfusion-Related Cell Count TRC

Procedure	Program Code	Challenges per Shipment
	TRC	
Platelet count (platelet-rich plasma)	▮	5
WBC count	▮	4
Dry challenge	▮	2

WBC counts must be performed using a Nageotte chamber, fluorescence microscopy, or by flow cytometry.

Program Information

- Five 1.2-mL suspensions of platelet-rich plasma
- Two 1.0-mL vials leukocyte-reduced platelet material
- Two 1.0-mL vials leukocyte-reduced red blood cells
- Three shipments per year

Waived Combination HCC, HCC2

Analyte	Program Code		Challenges per Shipment
	HCC	HCC2	
Hematocrit		▮	2
Hemoglobin	▮	▮	2
Urinalysis/Urine hCG		▮	2
Whole blood glucose	▮	▮	2 (HCC)/3 (HCC2)

Program Information

- HCC - Two 2.5-mL whole blood specimens; two shipments per year
- HCC2 - Total of four shipments per year
- Hematocrit, hemoglobin, and urinalysis/urine hCG testing - Two 3.0-mL whole blood specimens and two 10.0-mL urine specimens; two shipments per year: A and C
- Whole blood glucose testing - Three 2.5-mL whole blood specimens; two shipments per year: B and D
- To verify instrument compatibility, refer to the instrument matrix on page 66

Virtual Peripheral Blood Smear VPBS

Procedure	Program Code	Challenges per Shipment
	VPBS	
WBC differential	▮	3
Platelet estimate	▮	3
RBC morphology	▮	3
Blood cell identification	▮	15

Additional Information

- Examine online, whole slide images that include a manual 100 WBC differential count and annotated cells for identification.
- Evaluate and identify red blood cell (RBC) morphology and identify specific white blood cells (WBC) in peripheral blood.
- Recognize and integrate problem-solving skills through the use of interpretive questions found throughout the discussion.
- See system requirements on page 13.

Program Information

- Three online peripheral blood whole slide images that include 15 annotated cells for identification
- Powered by DigitalScope technology
- Two online activities per year; your CAP shipping contact will be notified via email when the activity is available

Expanded Virtual Peripheral Blood Smear EHE1

Procedure	Program Code	Challenges per Shipment
	EHE1	
WBC differential	▮	2
Platelet estimate	▮	2
RBC morphology	▮	2
WBC morphology	▮	2
Blood cell identification	▮	10

Additional Information

- More challenging and/or complex testing.
- Examine online, whole slide images that include a manual 100 WBC/differential count and annotated cells for identification.
- Comprehensive case studies.
- Ability to recognize and integrate problem-solving skills through the use of interpretive questions found throughout discussion.
- Evaluate and identifiy red blood cell (RBC) morphology and identify specific white blood cells (WBC) in peripheral blood.
- See system requirements on page 13.

Program Information

- Two online peripheral blood whole slide images that include 10 annotated cells for identification
- Powered by DigitalScope technology
- Two online activities per year; your CAP shipping contact will be notified via email when the activity is available

Hematopathology Online Education HPATH/HPATH1

Program	Program Code	Challenges per Shipment
	HPATH/HPATH1	
Hematopathology online case review	▮	5

Additional Information

HPATH educates pathologists, hematolopathologists, and hematologists with an interest in hematopathology to assess and improve their diagnostic skills in hematopathology.

- All cases have been specially selected to highlight important changes in the 2016 revision of the WHO Classification.
- Clinical history and relevant laboratory data.
- At least one online, whole slide image of peripheral blood, bone marrow, spleen, lymph node, or other tissue.
- Results of ancillary studies such as immunohistochemistry, flow cytometry, FISH, karyotyping, and molecular studies, where appropriate.
- Case discussion and discussion of differential diagnoses.
- Five SAM questions per case.
- See system requirements on page 13.

Program Information

- HPATH - Five diagnostic challenges/online whole slide images with clinical history; reporting with CME/SAM credit is available for one pathologist/hematologist. For additional pathologist/hematologist, order HPATH1
- HPATH1 - Reporting option with CME/SAM credit for each additional pathologist and hematologist (within the same institution); must order in conjunction with Survey HPATH
- Earn a maximum of 12.5 CME/SAM credits (*AMA PRA Category 1 Credits™*) per pathologist and a maximum of 12.5 CE credits per hematologist for completion of an entire year
- This activity meets the ABP MOC Part IV Practice Performance Assessment requirements
- Powered by DigitalScope technology
- Two online activities per year; your CAP shipping contact will be notified via email when the activity is available

Clinical Microscopy

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Urinalysis and Clinical Microscopy CMP, CMP1

Analyte/Procedure	Program Code		Challenges per Shipment
	CMP	CMP1	
Bilirubin	▮	▮	3
Blood or hemoglobin	▮	▮	3
Body fluid photographs	▮	▮	3
Glucose	▮	▮	3
hCG urine, qualitative	▮	▮	3
Ketones	▮	▮	3
Leukocyte esterase	▮	▮	3
Nitrite	▮	▮	3
Osmolality	▮	▮	3
pH	▮	▮	3
Protein, qualitative	▮	▮	3
Reducing substances	▮	▮	3
Specific gravity	▮	▮	3
Urine sediment photographs	▮	▮	3
Urobilinogen	▮	▮	3

Program Information

- CMP - Three 10.0-mL liquid urine specimens; for use with all instruments except iCHEM; six images, each available as photographs and online images
- CMP1 - Three 12.0-mL liquid urine specimens; for use with iCHEM instruments; six images, each available as photographs and online images
- Two shipments per year

CE credit

Additional Information

For second instrument reporting options, see the Quality Cross Check program, CMQ, on page 147.

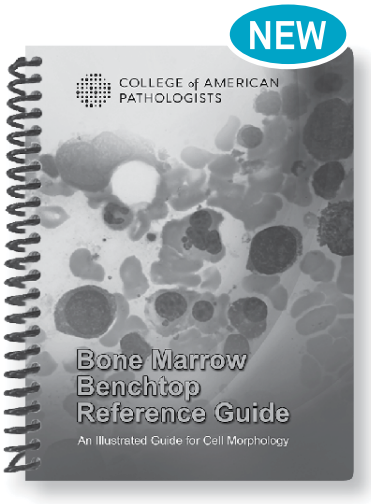
Bone Marrow Benchtop Reference Guide

Bone Marrow Benchtop Reference Guide is an illustrated guide to common and rare cells. With more than 60 different identifications and a detailed description for each cell morphology, it's an affordable, convenient way to identify various cell types quickly and confidently. Its rugged construction is well suited for heavy use at the workbench.

Select Bone Marrow Benchtop Reference Guide (BMBRG) on your Surveys order form.

Or, view sample pages and order online:

- printed books at estore.cap.org
- ebooks at ebooks.cap.org



Item number: BMBRG
Spiral bound; 2018

Quality Cross Check—Urinalysis CMQ

Analyte	Program Code	Challenges per Shipment
	CMQ	
Bilirubin	▮	3
Blood or hemoglobin	▮	3
Glucose	▮	3
hCG urine, qualitative	▮	3
Ketones	▮	3
Leukocyte esterase	▮	3
Nitrite	▮	3
Osmolality	▮	3
pH	▮	3
Protein, qualitative	▮	3
Reducing substances	▮	3
Specific gravity	▮	3
Urobilinogen	▮	3

This program does not meet regulatory requirements for proficiency testing; see Surveys CMP and CMP1 on page 146. For additional information about the Quality Cross Check program, see page 40.

Program Information

- Three 10.0-mL liquid urine specimens for use with all instruments
- Report up to three instruments
- Two shipments per year

The Quality Cross Check Program:

- Provides a solution for monitoring performance across multiple instruments, and is in compliance with the CMS directive regarding proficiency testing on multiple instruments.
- Simplifies instrument comparability efforts by providing custom reports with both peer group comparison and instrument comparability statistics.

Clinical Microscopy Miscellaneous Photopage CMMP

Procedure	Program Code	Challenges per Shipment
	CMMP	
Fern test (vaginal)	▮	1
KOH preparation (skin)	▮	1
Nasal smear	▮	1
Pinworm preparation	▮	1
Spermatozoa	▮	1
Stool for leukocytes	▮	1
Urine sediment photographs	▮	3
Vaginal wet preparation photographs (for clue cells, epithelial cells, trichomonas, and yeast)	▮	1

Program Information

- Ten images, each available as photographs and online images
- Two shipments per year

Amniotic Fluid Leakage AFL

Procedure	Program Code	Challenges per Shipment
	AFL	
pH interpretation	▮	3

Program Information
- Three 2.0-mL liquid specimens
- For use with nitrazine paper and the Amniotest™
- Two shipments per year

Automated Body Fluid Series ABF1, ABF2, ABF3

Procedure	Program Code			Challenges per Shipment
	ABF1	ABF2	ABF3	
Red blood cell fluid count	▮	▮	▮	2
White blood cell fluid count	▮	▮	▮	2

For method compatibility, see instrument matrix below.

Program Information
- Two 3.0-mL simulated body fluid specimens
- Two shipments per year

Automated Body Fluid, Instrument Matrix

Instrument	ABF Series		
	ABF1	ABF2	ABF3
Advanced Instruments GloCyte, Siemens ADVIA 120/2120 series	▮		
Coulter LH 700 series, Unicel DxH		▮	
Sysmex XE-2100, XE-2100C, XE-2100D, XE-2100DC, XE-2100L, XE-5000, XN-series, XN-L series, XT-1800i, XT-2000i, XT-4000i		▮	
IRIS iQ® 200			▮

Virtual Body Fluid VBF

Procedure	Program Code	Challenges per Shipment
	VBF	
Total nucleated cells differential	▮	2
Body fluid cell identification	▮	10

Additional Information
- Examine online, whole slide images that include a manual differential count and annotated cells for identification.
- Evaluate cell morphology and identify specific cells in a body fluid.
- See system requirements on page 13.

Program Information
- Two online, whole slide body fluid images that include 10 annotated cells for identification
- Powered by DigitalScope technology
- Two online activities per year; your CAP shipping contact will be notified via email when the activity is available

CE credit

Automated Urine Microscopy UAA, UAA1

Analyte	Program Code		Challenges per Shipment
	UAA	UAA1	
Casts, semiquantitative	▮	▮	2
Crystals, semiquantitative	▮		2
Epithelial cells, semiquantitative		▮	2
Red blood cells, quantitative	▮	▮	2
White blood cells, quantitative	▮	▮	2

Program Information

- UAA - Two 10.0-mL liquid urine specimens for use with IRIS and Roche instruments
- UAA1 - Two 12.0-mL liquid urine specimens for use with Sysmex instruments
- Two shipments per year

Automated Urinalysis, Instrument Matrix

Instrument	UAA, UAA1	
	UAA	UAA1
DIRUI FUS	X	
IRIS Iq200	X	
Roche cobas u701	X	
ARKRAY Auction Hybrid		X
77 Elektronika		X
Sysmex UF 50, 100, 500i, 1000i, 5000		X
Sysmex UX 2000		X

Crystals BCR, BFC, URC

Procedure	Program Code			Challenges per Shipment
	BCR	BFC	URC	
Bile crystal identification	▮			2
Body fluid crystal identification		▮		2
Urine crystal identification			▮	2

Program Information

- BFC - Two 1.5-mL simulated body fluid specimens (eg, synovial fluid)
- URC - Two 1.5-mL urine specimens
- BCR - Two photographs
- Two shipments per year

Dipstick Confirmatory DSC

Analyte	Program Code	Challenges per Shipment
	DSC	
Bilirubin	▮	2
Sulfosalicylic acid (SSA)	▮	2

Program Information

- Two 12.0-mL liquid urine specimens
- For use with methods to confirm positive bilirubin and protein dipstick results
- Two shipments per year

Fecal Fat FCFS

Analyte	Program Code	Challenges per Shipment
	FCFS	
Fecal fat, qualitative	▮	2

Program Information
- Two 10.0-g simulated fecal fat specimens
- For microscopic detection of neutral fats (triglycerides) and/or split fats (total free fatty acids)
- Two shipments per year

Fetal Hemoglobin APT

Analyte	Program Code	Challenges per Shipment
	APT	
Fetal hemoglobin (gastric fluid)	▮	2

Program Information
- Two 1.2-mL simulated gastric fluid specimens
- Two shipments per year

Gastric Occult Blood GOCB

Analyte	Program Code	Challenges per Shipment
	GOCB	
Gastric occult blood	▮	3
Gastric pH	▮	3

Program Information
- Three 2.0-mL simulated gastric specimens
- Two shipments per year

Glucose-6-Phosphate Dehydrogenase G6PDS

Analyte	Program Code	Challenges per Shipment
	G6PDS	
G6PD, qualitative and quantitative	▮	2

Program Information
- Two 0.5-mL lyophilized hemolysate samples
- Two shipments per year

Hemocytometer Fluid Count HFC

Procedure	Program Code	Challenges per Shipment
	HFC	
Cytopreparation differential	▮	3
Red blood cell fluid count	▮	3
White blood cell fluid count	▮	3

Program Information
- Three 1.0-mL simulated body fluid specimens
- Two shipments per year

Hemocytometer Fluid Count, International HFCI

Procedure	Program Code	Challenges per Shipment
	HFCI	
Red blood cell fluid count	▮	3
White blood cell fluid count	▮	3
Body fluid differential	▮	2

This program meets the CAP's Accreditation Program requirements.

Additional Information

- Examine online, whole slide images that include a manual differential count.
- See system requirements on page 13.

Program Information

- Three 2.0-mL simulated body fluid specimens; two online, whole slide images for 2- and 5-part differential
- Designed for international laboratories that have experienced significant shipping and receiving issues and need longer program stability
- Powered by DigitalScope technology
- Two shipments per year

Lamellar Body Count LBC

Procedure	Program Code	Challenges per Shipment
	LBC	
Lamellar body count	▮	3

Program Information

- Three 2.0-mL simulated liquid amniotic fluid specimens
- For use with LBC methods performed on all hematology analyzers
- Two shipments per year

Occult Blood OCB

Analyte	Program Code	Challenges per Shipment
	OCB	
Occult blood	▮	3

Additional Information

For second instrument reporting options, see the Quality Cross Check program, OCBQ, on page 152.

Program Information

- Three 2.0-mL simulated fecal specimens
- Two shipments per year

Quality Cross Check—Occult Blood OCBQ

Analyte	Program Code	Challenges per Shipment
	OCBQ	
Occult blood	▮	3

This program does not meet regulatory requirements for proficiency testing; see Survey OCB on page 151. For additional information about the Quality Cross Check program, see page 40.

The Quality Cross Check Program:

- Provides a solution for monitoring performance across multiple instruments, and is in compliance with the CMS directive regarding proficiency testing on multiple instruments.
- Simplifies instrument comparability efforts by providing custom reports with both peer group comparison and instrument comparability statistics.

Program Information

- Three 2.0-mL simulated fecal specimens
- Report up to three instruments
- Two shipments per year

Rupture of Fetal Membranes Testing ROM1

Procedure	Program Code	Challenges per Shipment
	ROM1	
Rupture of fetal membranes	▮	3

Program Information

- Three 0.5-mL simulated vaginal specimens for methods such as Actim PROM, Amnisure, and Clinical Innovations
- Two shipments per year

Special Clinical Microscopy SCM1, SCM2

Analyte/Procedure	Program Code		Challenges per Shipment
	SCM1	SCM2	
Urine hemosiderin, Prussian blue	▮		3
Urine eosinophils, Wright stain		▮	3

Program Information

- Three images, each available as photographs and online images
- Two shipments per year

Ticks, Mites, and Other Arthropods TMO

Procedure	Program Code	Challenges per Shipment
	TMO	
Tick, mite, and arthropod identification	▮	3

Program Information

- Three images, each available as photographs and online images
- Two shipments per year

Urine hCG UHCG

Procedure	Program Code	Challenges per Shipment
	UHCG	
Urine hCG, qualitative	▮	5

Program Information

- Five 1.0-mL urine specimens
- Three shipments per year

Urine Albumin and Creatinine, Semiquant UMC

Analyte/Procedure	Program Code	Challenges per Shipment
	UMC	
Creatinine	▮	2
Urine albumin (microalbumin): creatinine ratio	▮	2
Urine albumin (microalbumin), semiquantitative	▮	2

For quantitative reporting, refer to Survey U, page 68.

Program Information

- Two 3.0-mL liquid urine specimens
- For use with dipstick and semiquantitative methods only
- Two shipments per year

Worm Identification WID

Procedure	Program Code	Challenges per Shipment
	WID	
Worm identification	▮	3

Program Information

- Three images, each available as photographs and online images
- Two shipments per year

Hematology Benchtop Reference Guide (HBRG)

- More than 50 different cell identifications, including common and rare cells
- Detailed descriptions for each cell morphology
- Six tabbed sections for easy reference
  - Erythrocytes
  - Erythrocyte Inclusions
  - Granulocytic (Myeloid) and Monocytic Cells
  - Lymphocytic Cells
  - Platelets and Megakaryocytic Cells
  - Microorganisms and Artifacts
- A durable and water-resistant format to withstand years of benchtop use—5” x 6½”

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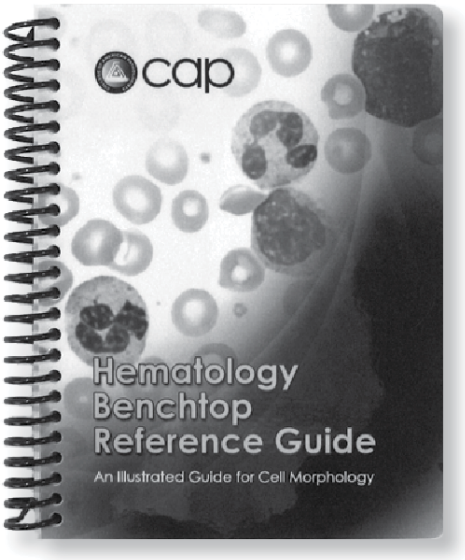

Item number: HBRG
Spiral bound; 60 pages;
50+ images; 2012

Semen Analysis Benchtop Reference Guide

Semen Analysis Benchtop Reference Guide is an illustrated guide to sperm morphology. The content includes specimen collection and macroscopic assessment, sperm count, and morphology assessment and classification systems. Also included are 50 images representing normal morphology, head defects, neck/midpiece defects, tail defects, and residual cytoplasm defects, as well as images of nonsperm cells, Pap-stained sperm, and equipment. The sturdy laminated guide features tabbed sections for easy reference.

Select Semen Analysis Benchtop Reference Guide (SABRG) on your Surveys order form.

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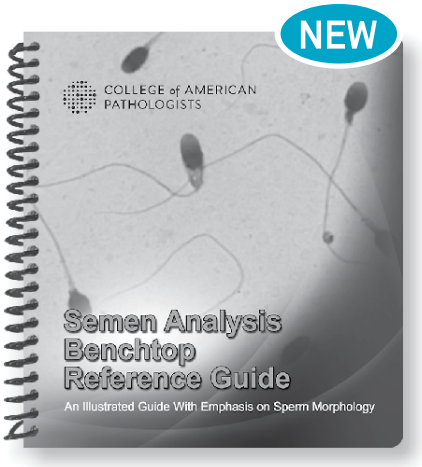
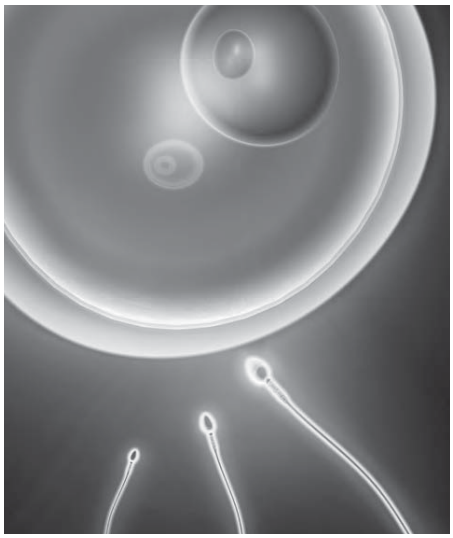


Item number: SABRG
Spiral bound; 6-1/2” x 7”; 2018

13 Reproductive Medicine



Access reproductive medicine's integrated laboratory improvement program.

- Unique accreditation checklist specific for the subspecialty of reproductive medicine.
- Comprehensive proficiency testing and educational programs for andrology and embryology.
- New Postvasectomy Sperm Count—Automated (PV1) provides additional volume of the current PV program for use with automated analyzers.

Reproductive Medicine

New Programs NEW

Andrology and Embryology

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Semen Analysis SC, SC1, PV, PV1, SM, SV, ASA

Procedure	Program Code							Challenges per Shipment
	SC	SC1	PV	PV1 NEW	SM	SV	ASA	
Sperm count and presence/absence (manual methods and CASA systems)	▮							2
Sperm count and presence/absence (automated methods)		▮						2
Postvasectomy sperm count and presence/absence			▮					2
Postvasectomy sperm count and presence/absence (automated methods)				▮				2
Sperm morphology					▮			2
Sperm viability						▮		2
Antisperm antibody IgG							▮	2

Program Information

- SC - Two 0.3-mL stabilized sperm specimens
- SC1 - Two 1.0-mL stabilized sperm specimens
- PV - Two 0.3-mL stabilized sperm specimens with counts appropriate for postvasectomy testing
- PV1 - Two 1.0-mL stabilized sperm specimens with counts appropriate for postvasectomy testing
- SM - Two prepared slides for staining
- SV - Two eosin-nigrosin-stained slides
- ASA - Two 0.3-mL serum specimens
- Two shipments per year

CE credit

Sperm Motility, Morphology, and Viability SMCD, SM1CD, SM2CD

Procedure	Program Code			Challenges per Shipment
	SMCD	SM1CD	SM2CD	
Sperm count	▮			2
Sperm motility/forward progression	▮			2
Sperm morphology		▮		2
Sperm viability			▮	2

Program Information

- SMCD - Video clips of sperm available for hemocytometer, Makler, and disposable chambers
- SM1CD - Two challenges that may be viewed as online, whole slide images by DigitalScope technology or as static images
- SM2CD - Two challenges that may be viewed as online, whole slide images by DigitalScope technology or as static images
- Two shipments per year

CE credit

Embryology EMB

Procedure	Program Code	Challenges per Shipment
	EMB	
Embryo transfer and quality assessment (three- and five-day-old embryos)	▮	4

Program Information
- Two sets of five video clips
- Two shipments per year

Ligand—Special Y, YY, DY

Analyte	Program Code		Challenges per Shipment
	Y, YY	DY	
11-deoxycortisol	▮		3
17-hydroxyprogesterone	▮		3
Androstenedione	▮		3
DHEA sulfate	▮		3
Estradiol	▮		3
Estriol, unconjugated (uE3)	▮		3
Follicle-stimulating hormone (FSH)	▮		3
Growth hormone (GH)	▮		3
IGF-1 (somatomedin C)	▮		3
Luteinizing hormone (LH)	▮		3
Progesterone	▮		3
Prolactin	▮		3
Testosterone	▮		3
Testosterone, bioavailable (measured)		▮	3
Testosterone, free (measured)		▮	3
Sex hormone-binding globulin (SHBG)		▮	3

Program Information
- Y - Three 5.0-mL liquid serum specimens in duplicate
- YY - Three 5.0-mL liquid serum specimens in triplicate
- DY - Must order in conjunction with Survey Y or YY
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

CE credit

Antimüllerian Hormone AMH

Analyte	Program Code	Challenges per Shipment
	AMH	
Antimüllerian hormone	▮	3

Program Information
- Three 1.0-mL lyophilized serum specimens
- Two shipments per year

Insight at a glance.

In just seconds, the CAP's Performance Analytics Dashboard provides valuable insights into your laboratory's performance, letting you proactively focus energy on areas that need immediate attention while filtering out distractions. Updated daily, this complimentary Surveys and CAP accreditation performance monitoring tool reduces the stress of managing today's laboratory by giving you fast access to a single laboratory's or an expansive network's performance.

To view a demo, search Performance Analytics Dashboard at cap.org.

14 Coagulation

Meet requirements for calibration verification and linearity for coagulation testing.

- Hemostasis test methods that are calibrated and directly measure the concentration of an analyte require calibration verification/linearity (CVL).
- Coagulation programs available include Heparin CVL (LN36), von Willebrand Factor Antigen CVL (LN37), D-Dimer CVL (LN42), Thrombophilia CVL (LN35), and Fibrinogen CVL (LN44).

Discontinued Programs

11-dehydrothromboxane B2 (TBX)

Coagulation

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Coagulation—Limited CGB, CGL, CGDF

Analyte	Program Code			Challenges per Shipment
	CGB	CGL	CGDF	
Activated partial thromboplastin time	▮	▮		5
Fibrinogen		▮		5
International normalized ratio (INR)*	▮	▮		5
Prothrombin time	▮	▮		5
D-dimer**		▮	▮	2 per year
Fibrin(ogen) degradation products, plasma**		▮	▮	2 per year
Fibrin(ogen) degradation products, serum**		▮	▮	2 per year

*Participants reporting INR results will receive a special evaluation to assess the INR calculation.
**D-dimer and FDP are shipped with the CGL A and C mailings.

Program Information

- CGB - Five 1.0-mL lyophilized plasma specimens; three shipments per year
- CGL - Five 1.0-mL lyophilized plasma specimens; three shipments per year; one 1.0-mL plasma specimen and one 1.0-mL serum specimen; three shipments per year
- CGDF - One 1.0-mL serum specimen; one 1.0-mL lyophilized plasma specimen; two shipments per year

CE credit

Additional Information

For second instrument reporting options, see the Quality Cross Check program, CGLQ, below.

Quality Cross Check—Coagulation CGLQ

Analyte	Program Code	Challenges per Shipment
	CGLQ	
Activated partial thromboplastin time	▮	3
Fibrinogen	▮	3
International normalized ratio (INR)	▮	3
Prothrombin time	▮	3
D-dimer	▮	1
Fibrin(ogen) degradation products, plasma	▮	1
Fibrin(ogen) degradation products, serum	▮	1

This program does not meet regulatory requirements for proficiency testing; see Survey CGL above. For additional information about the Quality Cross Check program, see page 40.

Program Information

- Three 1.0-mL lyophilized plasma specimens in triplicate, one 1.0-mL plasma specimen, and one 2.0-mL serum specimen
- Report up to three instruments
- Two shipments per year

The Quality Cross Check Program:

- Provides a solution for monitoring performance across multiple instruments, and is in compliance with the CMS directive regarding proficiency testing on multiple instruments.
- Simplifies instrument comparability efforts by providing custom reports with both peer group comparison and instrument comparability statistics.

Coagulation—Extended CGE, CGEX		
Analyte	**Program Code**	**Challenges per Shipment**
	CGE, CGEX	
See analyte listing below	▮	2

Program Information

- CGE - Two 1.0-mL lyophilized plasma specimens in triplicate
- CGEX - Two 1.0-mL lyophilized plasma specimens (five vials each)
- Two shipments per year

Coagulation Analyte Listing (Quantitative Results)

50:50 mixing study, PT and aPTT
Activated partial thromboplastin time
Activated protein C resistance
Alpha-2-antiplasmin
Antithrombin activity/antigen
Dilute prothrombin time
Factors II, V, VII, VIII, IX, X, XI, XII, and XIII
Fibrinogen antigen
Heparin-induced thrombocytopenia (HIT)
Plasminogen activator inhibitor
Plasminogen activity/antigen
Prekallikrein
Protein C
Protein S
Prothrombin time
Reptilase time
Thrombin time
von Willebrand factor activity:
- Collagen binding
- Glycoprotein I_b binding
- Ristocetin cofactor

von Willebrand factor antigen

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Choose code CPIP/CPIP1 on your Surveys order form.

Coagulation Special Testing Series CGS1, CGS2, CGS3, CGS4, CGS5, CGS6, CGS7, CGS8

Module/Analyte	Challenges per Shipment							
	Program Code							
	CGS1	CGS2	CGS3	CGS4	CGS5	CGS6	CGS7	CGS8
Activated partial thromboplastin time*	2		2	3				
International normalized ratio (INR)	2			3				
Prothrombin time*	2			3				
Lupus Anticoagulant and Mixing Studies Module								
Dilute Russell's viper venom time	2							
Lupus anticoagulant (confirmation and screen)	2							
50:50 mixing studies, PT and aPTT	2							
Thrombophilia Module								
Activated protein C resistance		2						
Antithrombin (activity, antigen)		2						
Protein C (activity, antigen)		2						
Protein S (activity, free antigen, total antigen)		2						
von Willebrand Factor Antigen Module								
Factor VIII assay			2					
von Willebrand factor (antigen, activity, multimers)			2					
Factor VIII inhibitor			2					
Fibrin monomer			2					
Heparin Module								
Heparin activities using methodologies including Anti-Xa (unfractionated, low molecular weight, and hybrid curve)				3				
Thrombin time				3				
Heparin-Induced Thrombocytopenia Module								
Appropriate with methods such as Gen-Probe Lifecodes PF4 IgG and Gen-Probe Lifecodes PF4 Enhanced® assays					2			
Appropriate with the Akers Biosciences, Inc. PIFA® Heparin/ Platelet Factor 4 Rapid Assay						3		

Continued on the next page

*Not appropriate for meeting regulatory requirements, see page 160.

Program Information

- CGS1, CGS2, CGS3 - A total of two 2.0-mL of lyophilized plasma specimens
- CGS4 - Three 1.0-mL lyophilized plasma specimens
- CGS5 - Two 60.0-µL serum specimens
- CGS6, CGS8 - Three 400.0-µL frozen serum specimens
- CGS7 - Three 1.0-mL lyophilized plasma specimens in duplicate
- Two shipments per year

Coagulation Special Testing Series CGS1, CGS2, CGS3, CGS4, CGS5, CGS6, CGS7, CGS8 continued

Module/Analyte	Challenges per Shipment							
	Program Code							
	CGS1	CGS2	CGS3	CGS4	CGS5	CGS6	CGS7	CGS8
Heparin-Induced Thrombocytopenia Module continued								
Appropriate with the Akers Biosciences, Inc. PIFA PlussPF4™ Heparin/Platelet Factor 4 Rapid Assay								3
ADAMTS13 Module								
ADAMTS13 (activity, inhibitor screen, and titer)							3	

*Not appropriate for meeting regulatory requirements, see page 160.

Program Information

- CGS1, CGS2, CGS3 - A total of 2.0-mL of lyophilized plasma specimens
- CGS4 - Three 1.0-mL lyophilized plasma specimens
- CGS5 - Two 60.0-µL serum specimens
- CGS6, CGS8 - Three 400.0-µL frozen serum specimens
- CGS7 - Three 1.0-mL lyophilized plasma specimens in duplicate
- Two shipments per year

Apixaban, Dabigatran, Fondaparinux, Rivaroxaban Anticoagulant Monitoring APXBN, DBGN, FNPX, RVBN

Analyte	Program Code				Challenges per Shipment
	APXBN	DBGN	FNPX	RVBN	
Activated partial thromboplastin time*	▮	▮	▮	▮	3
Prothrombin time*	▮	▮	▮	▮	3
Thrombin time		▮			3
Apixaban	▮				3
Dabigatran		▮			3
Fondaparinux			▮		3
Rivaroxaban				▮	3

*Not appropriate for meeting regulatory requirements, see page 160.

Program Information

- Three 1.0-mL lyophilized specimens
- Two shipments per year

Activated Clotting Time Series CT, CT1, CT2, CT3, CT5

Instrument/Cartridge	Program Code					Challenges per Shipment
	CT	CT1	CT2	CT3	CT5	
Helena Actalyke®	▮					3
Helena Cascade POC	▮					3
IL Gem® PCL ACT				▮		3
IL Gem PCL ACT-LR			▮			3
IL GEM PCL Plus ACT				▮		3
IL GEM PCL Plus ACT-LR			▮			3
ITC Hemochron® CA510/FTCA510	▮					3
ITC Hemochron FTK-ACT	▮					3
ITC Hemochron Jr. Signature/ACT+				▮		3
ITC Hemochron Jr. Signature/ACT-LR			▮			3
ITC Hemochron P214/P215	▮					3
i-STAT® Celite® and Kaolin ACT					▮	3
Medtronic HemoTec ACT/ACTII/ACT Plus HR-ACT		▮				3
Medtronic HemoTec ACT/ACTII/ACT Plus LR-ACT		▮				3
Medtronic HemoTec ACT/ACTII/ACT Plus R-ACT		▮				3
Medtronic Hepcon HMS, HMS Plus		▮				3
Sienco Sonoclot®	▮					3

Program Information

- CT - Three 3.0-mL lyophilized whole blood specimens with corresponding diluents
- CT1 - Three 1.7-mL lyophilized whole blood specimens with corresponding diluents
- CT2 - Three 0.5-mL lyophilized whole blood/diluent ampules
- CT3 - Three 0.5-mL lyophilized whole blood/diluent ampules
- CT5 - Three 1.7-mL lyophilized whole blood specimens with corresponding diluents
- Two shipments per year

Additional Information

For second instrument reporting options, see the Quality Cross Check programs CTQ-CT3Q and CT5Q, on page 165.

Have you created or updated your CAP Profile?

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- Certifications
- Contact preferences
- Inspector-related information
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- Specialties and skills
- Addresses

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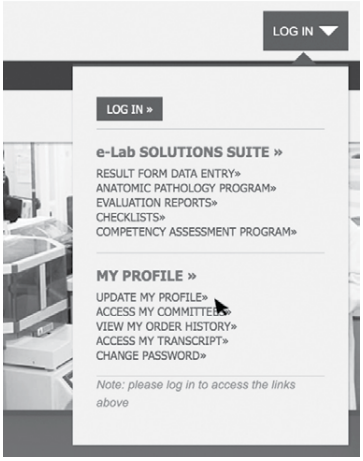

Quality Cross Check—Activated Clotting Time Series CTQ, CT1Q, CT2Q, CT3Q, CT5Q

Instrument/Cartridge	Program Code					Challenges per Shipment
	CTQ	CT1Q	CT2Q	CT3Q	CT5Q	
Helena Actalyke®	▮					3
Helena Cascade POC	▮					3
IL Gem® PCL ACT				▮		3
IL Gem PCL ACT-LR			▮			3
IL GEM PCL Plus ACT				▮		3
IL GEM PCL Plus ACT-LR			▮			3
ITC Hemochron® CA510/FTCA510	▮					3
ITC Hemochron FTK-ACT	▮					3
ITC Hemochron Jr. Signature/ACT+				▮		3
ITC Hemochron Jr. Signature/ACT-LR			▮			3
ITC Hemochron P214/P215	▮					3
i-STAT Celite® and Kaolin ACT					▮	3
Medtronic HemoTec ACT/ACTII/ACT Plus HR-ACT		▮				3
Medtronic HemoTec ACT/ACTII/ACT Plus LR-ACT		▮				3
Medtronic HemoTec ACT/ACTII/ACT Plus R-ACT		▮				3
Medtronic Hepcon HMS, HMS Plus		▮				3
Sienco Sonoclot®	▮					3

These programs do not meet regulatory requirements for proficiency testing; see Surveys CT-CT3 and CT5 on page 164. For additional information about the Quality Cross Check program, see page 40.

The Quality Cross Check Program:

- Provides a solution for monitoring performance across multiple instruments, and is in compliance with the CMS directive regarding proficiency testing on multiple instruments.
- Simplifies instrument comparability efforts by providing custom reports with both peer group comparison and instrument comparability statistics.

Program Information

- CTQ - Three 3.0-mL lyophilized whole blood specimens in triplicate with corresponding diluents
- CT1Q - Three 1.7-mL lyophilized whole blood specimens in triplicate with corresponding diluents
- CT2Q - Three 0.5-mL lyophilized whole blood/diluent ampules in triplicate
- CT3Q - Three 0.5-mL lyophilized whole blood/diluent ampules in triplicate
- CT5Q - Three 1.7-mL lyophilized whole blood specimens in triplicate with corresponding diluents
- Report up to three instruments
- Two shipments per year

Platelet Function* PF, PF1

Instrument/Method	Program Code		Challenges per Shipment
	PF	PF1	
Platelet aggregation	▮		2
PFA-100		▮	2
Helena Plateletworks®		▮	2

*This Survey requires the draw of a normal donor sample.

Program Information

- PF - Four 3.2% sodium citrate vacuum tubes; two 10.0-mL plastic tubes
- PF1 - Four 3.2% sodium citrate vacuum tubes; two 10.0-mL plastic tubes
- Two shipments per year

Viscoelastometry TEG

Instrument/Method	Program Code	Challenges per Shipment
	TEG	
Viscoelastometry	▮	2

Program Information

- Two 1.0-mL lyophilized whole blood specimens with diluents
- For use with the Haemonetics™ Thromboelastograph®, including TEG5000 and TEG6s (TEG and rapid TEG), ROTEM® *delta* hemostasis analyzers
- Two shipments per year

Coagulation Calibration Verification/Linearity LN35, LN36, LN37

Analyte	Program Code			
	LN35	LN36	LN37	Target Ranges
Antithrombin activity	▮			10%–130%
Protein C activity	▮			10%–100%
Heparin, low molecular weight		▮		0.1–2.0 U/mL
Heparin, unfractionated		▮		0.1–1.3 U/mL
von Willebrand factor antigen			▮	5%–140%

The LN35, LN36, and LN37 CVL programs meet the CAP Accreditation requirements HEM.38009, 38010, and 38011.

LN Express service is available.

Program Information

- LN35, LN37 - Six 1.0-mL frozen plasma specimens per mailing
- LN36 - Twelve 1.0-mL frozen plasma specimens per mailing, which include six for low molecular weight heparin and six for unfractionated heparin
- Two shipments per year; ships on dry ice

D-Dimer Calibration Verification/Linearity LN42

Analyte	Program Code	
	LN42	Target Range
D-dimer	▮	220–5,500 ng/mL FEU

LN Express service is available.

Program Information
- Six 1.0-mL plasma specimens
- Two shipments per year

Fibrinogen Calibration Verification/Linearity LN44

Analyte	Program Code	
	LN44	Target Range
Fibrinogen	▮	80–900 mg/dL

LN Express service is available.

Program Information
- Six 1.0-mL frozen plasma specimens
- Two shipments per year; ships on dry ice

Drug-Specific Platelet Aggregation PIA, PIAX

Procedure	Program Code		Challenges per Shipment
	PIA	PIAX	
Aspirin assay	▮	▮	3
PRU test	▮	▮	3

Program Information
- PIA - Three lyophilized specimens with diluents
- PIAX - All Survey PIA specimens in duplicate
- For use with the Accumetrics VerifyNow® System
- Kit includes sufficient material to perform one assay; multiple assay reporting requires the purchase of PIAX
- Two shipments per year

Whole Blood Coagulation WP3, WP4, WP6, WP9, WP10

Analyte	Challenges per Shipment				
	Program Code				
	WP3	WP4	WP6	WP9	WP10
International normalized ratio (INR)	5	5	5	5	3
Prothrombin time	5	5	5	5	–

For method compatibility, see instrument matrix below.

Program Information

- WP3 - Five 1.0-mL lyophilized plasma specimens with corresponding diluents
- WP4, WP6 - Five 0.5-mL unitized lyophilized blood specimens
- WP9 - Five 0.3-mL lyophilized plasma specimens
- Three shipments per year
- WP10 - Three 0.3-mL lyophilized plasma specimens with corresponding diluents; two shipments per year

Whole Blood Coagulation, Instrument Matrix

Instrument	Program Code				
	WP3	WP4	WP6	WP9	WP10
Abbott CoaguSense™	▮				
Helena Cascade POC – Citrated		▮			
Helena Cascade POC – Noncitrated			▮		
IL GEM PCL, PCL Plus – Citrated		▮			
IL GEM PCL, PCL Plus – Noncitrated			▮		
ITC Hemochron Jr. Signature/Signature +, Signature Elite and Jr. II – Citrated cuvette		▮			
ITC Hemochron Jr. Signature/Signature +, Signature Elite and Jr. II – Noncitrated cuvette			▮		
i-STAT	▮				
Roche CoaguChek XS Plus and XS Pro				▮	
Roche CoaguChek XS System					▮

Platelet Mapping* PLTM

Analyte	Program Code	Challenges per Shipment
	PLTM	
AA % aggregation/inhibition	▮	2
ADP % aggregation/inhibition	▮	2

*This Survey requires the draw of a normal donor sample.

Program Information

- One 3.2% sodium citrate and two heparin vacuum tubes; two 3.5-mL plastic tubes; one vial of 0.2M $CaCl_2$
- For use with the Haemonetics Platelet Mapping® assay
- Two shipments per year

Improve the reliability of your patient results with CAP Survey Validated Materials

Use the same material that is sent in the Surveys program to:

- Identify and troubleshoot instrument/method problems
- Correlate results with other laboratories or instruments
- Document correction of problems identified in Surveys
- Utilize material with confirmed results as an alternative external quality control
- Identify potential proficiency testing failures

Each laboratory receives a Survey Participant Summary, which includes readily available results.

Coagulation—Limited, Validated Material

Validated Material	Program Code	Corresponding Survey	Page
Coagulation	CGM	CGL	160

Program Information

- Five 1.0-mL lyophilized plasma specimens; three shipments per year; one 1.0-mL lyophilized plasma specimen and one 1.0-mL serum specimen; two shipments per year

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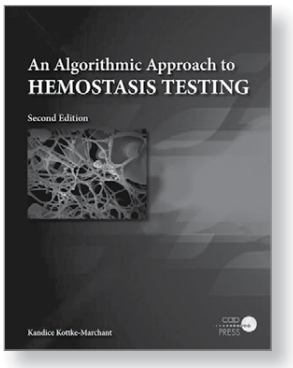

Item number: PUB223
Hardcover; 480 pages; 175+ figures, tables, and algorithms; 2016

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15 Microbiology

Microbiology testing is changing at a rapid pace—so is our proficiency testing.

Introducing three new programs for:

- Molecular testing utilizing a gastrointestinal panel, 5 challenges (GIP5)
- Molecular testing for carbapenem-resistant organisms (CRO)
- Molecular testing for vaginitis/vaginosis panel (MVP)

Microbiology

New Programs NEW

Microbiology

Guide to Molecular Microbiology Testing

Use this flowchart as a guide for ordering the appropriate Molecular Microbiology Surveys for your laboratory's testing menu. Participants must report five specimens for each mailing to meet CLIA requirements for the subspecialties of bacteriology. See the following pages for more detailed information about each Survey.

Do you perform molecular testing on Chlamydia or GC only?	Do you perform nucleic acid amplification other than GC?	Do you perform viral load testing only?	Do you perform molecular multiplexing?
↓ YES	↓ YES	↓ YES	↓ YES
Select from the following: ▪ **HC6, HC6X,HC7** *Chlamydia*/GC Nucleic Acid Amplification (page 186)	Select from the following: ▪ **IDO, ID1, ID1T, ID2, IDN** Nucleic Acid Amplification (pages 197, 198, 201) ▪ **D1** Throat Culture (page 175) ▪ **MRS2M/MRS5M** MRSA Screen, Molecular (page 183) ▪ **BOR** *Bordetella pertussis/ parapertussis* (page 181) ▪ **CDF5** *C. difficile* Detection (page 182) ▪ **TVAG** *Trichomonas vaginalis* (page 187) ▪ **VBDM** Zika (page 200)	Select from the following: ▪ **HV2** HIV Viral Load (page 199) ▪ **HCV2, HBVL, HBVL5** Hepatitis Viral Load (page 198) ▪ **VLS, VLS2** Viral Load (page 199)	Select from the following: ▪ **ID3** Influenza A, Influenza B, RSV by NAA (page 198) ▪ **IDME** Meningitis/Encephalitis Panel (page 202) ▪ **IDR** Infectious Disease Respiratory Panel (page 202) ▪ **GIP, GIP5** Gastrointestinal Panel (page 203) ▪ **GNBC, GPBC** Blood Culture Panels (page 180)

Bacteriology

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Guide for Ordering Regulated Bacteriology Surveys

Procedure	Program Code									
	D	D4	MC1	MC2	MC5	D2	D7	D3	MC4	D1
Bacterial identification	▮	▮	▮	▮	▮	▮	▮	▮	▮	▮
Gram stain	▮	▮	▮	▮	▮	▮	▮	▮		
Antimicrobial susceptibility testing	▮	▮	▮	▮	▮	▮	▮			
Bacterial antigen detection	▮	▮	▮	▮	▮				▮	

Participants must report five specimens for each mailing to meet CLIA requirements for the subspecialty of bacteriology. See the following pages for more detailed information about each Survey.

Bacteriology D

Procedure	Program Code	Challenges per Shipment
	D	
Antimicrobial susceptibility testing	▮	1 graded, 1 ungraded
Bacterial antigen detection	▮	2
Bacterial identification	▮	5
Gram stain	▮	1

Additional Information

Antigen detection challenges will be included in the following shipments:

- Shipment A: *C. difficile* antigen/toxin* and spinal fluid meningitis panel
- Shipment B: Spinal fluid meningitis panel and Group A *Streptococcus*
- Shipment C: *C. difficile* antigen/toxin* and Group A *Streptococcus*

*CMS has clarified that the *C. difficile* toxin test is not subject to CLIA regulations; therefore, toxin results will not be sent to CMS. Only *C. difficile* antigen results will be sent.

Program Information

- Five swab specimens with diluents in duplicate for culture
- Culture sources may include wounds, blood, respiratory, urines, stools, and anaerobes on a rotational basis
- Two specimens for bacterial antigen detection from the following:
  - One swab for Group A *Streptococcus*
  - One 1.0-mL lyophilized specimen for spinal fluid meningitis testing
  - One 0.5-mL lyophilized specimen for *Clostridium difficile*, for use with rapid or molecular testing methods
- Three shipments per year

CE credit

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Expanded Bacteriology DEX

Analyte	Program Code	Challenges per Shipment
	DEX	
Live organisms	▮	2

Additional Information

Expanded Bacteriology (DEX) is an educational opportunity that provides:

- Culture and susceptibility testing challenges for microbiology laboratories that perform complete identification and susceptibility of bacterial isolates including less common or problematic bacteria
- More exposure to emerging bacterial pathogens and novel resistance mechanisms
- Ability to recognize and identify organisms that exhibit multiple drug-resistance patterns
- Recovery and identification of mixed pathogens such as yeast, aerobic, and anaerobic bacteria in cultures containing multiple organisms

Program Information

- Two swab specimens in duplicate with diluents to perform bacterial identification and susceptibility (when directed)
- Three shipments per year

Microbiology Bench Tools Competency MBT

Procedure	Program Code	Challenges per Shipment
	MBT	
Bacterial identification	▮	6
Antimicrobial susceptibility testing	▮	2

Additional Information

Microbiology Bench Tools Competency (MBT) is a supplemental module for competency assessment and an educational resource for microbiology laboratories. The module:

- Provides organisms that challenge the basic elements of testing at the microbiology bench, including direct observation, monitoring, recording, and reporting of test results
- Can be used for both competency and educational purposes, including teaching and training pathology residents, new employees, and medical and MT/MLT students
- Provides identification and susceptibility results for supervisor use

This is not a proficiency testing program and participants will not return results to the CAP.

Program Information

- Six swab specimens with diluents for bacterial identification and susceptibility
- Culture sources will vary with each shipment
- Results will be provided with the kit to assess personnel competency
- Two shipments per year

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

GC, Throat, and Urine Cultures D1, D2, D3, D7

Procedure	Program Code				Challenges per Shipment
	D1	D2	D3	D7	
Antimicrobial susceptibility testing		▮		▮	1
Bacterial identification	▮	▮	▮	▮	5
Gram stain		▮	▮	▮	1
Culture source:	Throat	Urine	Cervical	Throat/Urine	
Microbiologic level:	Presence or absence of Group A *Streptococcus* determination	Organisms identified to the extent of your laboratory's protocol	Presence or absence of *Neisseria gonorrhoeae* determination	Combination of two throat and three urine culture specimens	

Program Information

- D1- Five swab specimens with diluents in duplicate
- D2 - Five loop specimens with diluents in duplicate, with one susceptibility challenge, and one Gram stain challenge
- D3 - Five loop specimens with diluents in duplicate, and one Gram stain challenge
- D7 - Two swab specimens with diluents in duplicate, three loop specimens with diluents in duplicate, one susceptibility challenge, and one Gram stain challenge
- Throat swabs compatible with molecular- and culture-based methods
- Three shipments per year

CE credit

BIOHAZARD

BIOHAZARD Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Bacteriology—Limited D4

Procedure	Program Code	Challenges per Shipment
	D4	
Antimicrobial susceptibility testing	▮	1
Group A *Streptococcus* antigen detection*	▮	1
Gram stain	▮	1
GC culture	▮	1
Throat culture	▮	2
Urine culture	▮	2

*If you are using a waived method for *Streptococcus* testing, these results will not count toward the required five challenges for the subspecialty of microbiology.

Program Information

- Three loop specimens with diluents in duplicate, two swab specimens with diluents in duplicate, and one swab specimen for bacterial antigen detection
- Urine culture will have one susceptibility challenge
- Throat swabs compatible with molecular- and culture-based methods
- Three shipments per year

Microbiology—Combination w/GC MC1, MC2

Procedure	Challenges per Shipment	
	Program Code	
	MC1	MC2
Antimicrobial susceptibility	1	1
GC culture	5	
Gram stain	2	1
Group A *Streptococcus* antigen detection*	1	1
Throat culture	2	3
Urine culture	3	5

*If you are using a waived method for *Streptococcus* testing, these results will not count toward the required five challenges for the subspecialty of microbiology.

Program Information

- MC1 - Eight loop specimens with diluents in duplicate, two swab specimens with diluents in duplicate, and one swab specimen for bacterial antigen detection
- MC2 - Five loop specimens with diluents in duplicate, three swab specimens with diluents in duplicate, and one swab specimen for bacterial antigen detection
- Urine cultures will only have one susceptibility challenge
- Throat swabs compatible with molecular- and culture-based methods
- Three shipments per year

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Urine Colony Count MC3, MC4

Procedure	Challenges per Shipment	
	Program Code	
	MC3	MC4
Urine colony count/**urine culture identification**	2	5
Group A *Streptococcus* antigen detection*		3
Throat culture		3

*If you are using a waived method for *Streptococcus* testing, these results will not count toward the required five challenges for the subspecialty of microbiology.

Program Information

- MC3 - Two 2.0-mL urine specimens with diluents
- MC4 - Five 2.0-mL urine specimens with diluents, three swab specimens with diluents in duplicate, and three swab specimens for bacterial antigen detection
- Throat swabs compatible with molecular- and culture-based methods
- Three shipments per year

Throat & Urine Culture/Rapid Strep A Antigen Detection MC5

Procedure	Program Code	Challenges per Shipment
	MC5	
Antimicrobial susceptibility	▮	1
Gram stain	▮	1
Group A *Streptococcus* antigen detection*	▮	2
Throat culture	▮	3
Urine culture	▮	3

*If you are using a waived method for *Streptococcus* testing, these results will not count toward the required five challenges for the subspecialty of microbiology.

Program Information

- Three loop specimens with diluents in duplicate, three swab specimens with diluents in duplicate, and two swab specimens for bacterial antigen detection
- Urine cultures will only have one susceptibility challenge
- Throat swabs compatible with molecular- and culture-based methods
- Three shipments per year

Gram Stain D5

Procedure	Program Code	Challenges per Shipment
	D5	
Gram stain	▮	5

Program Information

- Five air-dried, methanol-fixed unstained glass slides
- Three shipments per year

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Virtual Gram Stain Competency VGS1, VGS2

Procedure	Program Code		Challenges per Shipment
	VGS1	VGS2	
Virtual gram stain basic	▮		3
Virtual gram stain advanced		▮	3

Additional Information

- Virtual Gram Stain Basic Competency (VGS1) is for general and new laboratory technologists/technicians. Participants will assess the quality of specimens and stains and will report artifacts and detailed gram-positive and gram-negative morphology. Challenges will include specimens such as CSF, body fluids, and positive blood cultures.
- Virtual Gram Stain Advanced Competency (VGS2) is for experienced laboratory technologists/technicians and microbiologists. Participants will receive challenging images of sputum, body fluids, and other specimens to assess the quality, quantity, and typical morphology of both gram-positive and gram-negative organisms appropriate for the site.
- See system requirements on page 13.

Program Information

- Three online, whole slide images
- Results included in the kit to assess personnel competency
- Powered by DigitalScope® technology
- Two shipments per year

Rapid Group A Strep Antigen Detection D6

Procedure	Program Code	Challenges per Shipment
	D6	
Group A *Streptococcus* antigen detection*	▮	5

*If you are using a waived method for *Streptococcus* testing, these results will not count toward the required five challenges for the subspecialty of microbiology.

Program Information

- Five swab specimens
- Not compatible with molecular- and culture-based methods
- Three shipments per year

CE credit

Rapid Group A Strep Antigen Detection, Waived D9

Procedure	Program Code	Challenges per Shipment
	D9	
Group A *Streptococcus* antigen detection	▮	2

Program Information

- Two swab specimens
- Not compatible with molecular- and culture-based methods
- Two shipments per year

Group B Strep Detection D8

Analyte	Program Code	Challenges per Shipment
	D8	
Group B *Streptococcus*	▮	5

Program Information
- Five swab specimens with diluents
- Compatible with molecular- and culture-based methods
- Three shipments per year

Bacterial Antigen Detection LBAS, SBAS

Procedure	Program Code		Challenges per Shipment
	LBAS	SBAS	
Legionella pneumophila antigen detection	▮		2
Streptococcus pneumoniae antigen detection		▮	2

Program Information
- Two 0.5-mL liquid simulated clinical specimens
- Two shipments per year

Bacterial Strain Typing, *Staphylococcus* BSTS

Analyte	Program Code	Challenges per Shipment
	BSTS	
Staphylococcus	▮	2

Program Information
- Two sets of loops with diluents
- Two shipments per year

Blood Culture BCS

Procedure	Program Code	Challenges per Shipment
	BCS	
Blood culture bacterial detection and identification	▮	2

Program Information
- Two specimens with diluents for inoculation of blood culture bottles
- Two shipments per year

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Blood Culture, *Staphylococcus aureus* BCS1

Analyte	Program Code	Challenges per Shipment
	BCS1	
Staphylococcus aureus/MRSA	▮	3

Program Information

- Three specimens with diluents for inoculation of blood culture bottles
- Compatible with molecular methods for detection of *S. aureus*/MRSA from positive blood culture bottles
- Two shipments per year

Blood Culture Panel GNBC, GPBC

Procedure	Program Code		Challenges per Shipment
	GNBC	GPBC	
Identification of gram-negative organisms such as *Acinetobacter, Citrobacter, Enterobacter, Proteus, Haemophilus, Klebsiella, Neisseria, Pseudomonas, Serratia, E. coli,* and common resistance mechanisms isolated from positive blood culture bottles	▮		3
Identification of gram-positive organisms such as *Staphylococcus, Streptococcus, Enterococcus, Listeria,* and common resistance mechanisms isolated from positive blood culture bottles		▮	3

These Surveys are not for the inoculation of blood culture bottles.

Program Information

- Three 1.0-mL liquid simulated blood culture fluid specimens
- For laboratories using molecular multiplex panels
- Two shipments per year

PNA FISH PNA1, PNA2

Analyte	Program Code		Challenges per Shipment
	PNA1	PNA2	
Staphylococcus	▮		3
Yeast		▮	3

Program Information

- Three specimens with diluents for inoculation of blood culture bottles
- Two shipments per year

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Bordetella pertussis/parapertussis, Molecular BOR

Analyte	Program Code	Challenges per Shipment
	BOR	
Bordetella pertussis	▮	3
Bordetella parapertussis	▮	3

Program Information
- Three swab specimens
- Designed for molecular techniques
- Two shipments per year

Carbapenem-resistant Organisms CRO

NEW

Analyte	Program Code	Challenges per Shipment
	CRO	
KPC	▮	3
IMP	▮	3
NDM	▮	3
OXA	▮	3
VIM	▮	3

Program Information
- Three liquid specimens
- Designed for molecular methods such as Cepheid GeneXpert
- Two shipments per year

Campylobacter CAMP

Analyte	Program Code	Challenges per Shipment
	CAMP	
Campylobacter	▮	2

Program Information
- Two swabs with diluents in duplicate
- For use with rapid antigen, culture-based testing, and molecular methods
- Two shipments per year

C. difficile, 2 Challenge CDF2

Analyte	Program Code	Challenges per Shipment
	CDF2	
Clostridium difficile antigen/toxin	▮	2

Program Information
- Two 0.5-mL lyophilized specimens, for use with rapid or molecular testing methods
- Two shipments per year

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

C. difficile, 5 Challenge CDF5

Analyte	Program Code	Challenges per Shipment
	CDF5	
***Clostridium difficile* antigen**/toxin	▮	5

CMS has clarified that the *C. difficile* toxin test is not subject to CLIA regulations; therefore, toxin results will not be sent to CMS. Only *C. difficile* antigen results will be sent.

Program Information

- Five 0.5-mL lyophilized specimens, for use with rapid or molecular testing methods
- Three shipments per year

C. trachomatis Antigen Detection HC1, HC3

Procedure	Program Code		Challenges per Shipment
	HC1	HC3	
Antigen detection (DFA)	▮		5
Antigen detection (EIA)		▮	5

Program Information

- HC1 - Five 5-well slide specimens; for the detection of chlamydial elementary bodies by DFA
- HC3 - Five 2.0-mL liquid specimens for *Chlamydia* antigen testing by EIA
- Three shipments per year

Fecal Lactoferrin FLAC

Analyte	Program Code	Challenges per Shipment
	FLAC	
Fecal lactoferrin	▮	3

Program Information

- Three 0.5-mL simulated stool specimens
- For use with rapid methods
- Two shipments per year

Helicobacter pylori Antigen, Stool HPS

Procedure	Program Code	Challenges per Shipment
	HPS	
Helicobacter pylori antigen detection	▮	2

Program Information

- Two 0.5-mL fecal suspensions
- Two shipments per year

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Methicillin-resistant *S. aureus*, 2 Challenge MRS

Procedure	Program Code	Challenges per Shipment
	MRS	
MRSA/MSSA detection	▮	2

Program Information
- Two swab specimens with diluents
- For laboratories performing culture-based testing only or using culture and molecular testing
- Two shipments per year

MRSA Screen, Molecular, 2 Challenge MRS2M

Procedure	Program Code	Challenges per Shipment
	MRS2M	
MRSA/MSSA/SA detection	▮	2

Program Information
- Two swab specimens (in duplicate)
- For use with molecular methods that detect *mecA*
- Two shipments per year

Methicillin-resistant *Staphylococcus aureus* Screen, 5 Challenge MRS5

Procedure	Program Code	Challenges per Shipment
	MRS5	
MRSA/MSSA **detection**	▮	5

Program Information
- Five swab specimens with diluents
- For laboratories performing culture-based testing only or using culture and molecular testing
- Three shipments per year

MRSA Screen, Molecular, 5 Challenge MRS5M

Procedure	Program Code	Challenges per Shipment
	MRS5M	
MRSA/MSSA/SA **detection**	▮	5

Program Information
- Five swab specimens (in duplicate)
- For use with molecular methods that detect *mecA*
- Three shipments per year

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Laboratory Preparedness Exercise LPX

Analyte	Program Code	Challenges per Shipment
	LPX	
Live organisms	▮	3

Additional Information

The Laboratory Preparedness Exercise (LPX) was developed as a collaborative effort between the College of American Pathologists, the Centers for Disease Control and Prevention (CDC), and the Association of Public Health Laboratories (APHL). Laboratories will be sent live organisms that either exhibit characteristics of bioterrorism agents or demonstrate epidemiologic importance and will be expected to respond following Laboratory Response Network Sentinel Laboratory Guidelines if a bioterrorism agent is suspected. All agents provided are excluded from the CDC's select agent list. These may include strains of *Bacillus anthracis, Yersinia pestis, Francisella tularensis,* and *Brucella abortus* that have been modified and are safe for testing in a laboratory that contains a certified Class II Biological Safety Cabinet and is capable of handling Category A and B agents.

Program Information

- Three swab specimens with diluents
- Not available to international customers due to United States export law restrictions
- Two shipments per year

Rapid Urease RUR

Analyte	Program Code	Challenges per Shipment
	RUR	
Urease	▮	3

Program Information

- Three simulated gastric biopsy specimens
- For use with methods such as CLOTEST®
- Two shipments per year

Stool Pathogen SP, SPN, SP1

Analyte	Program Code			Challenges per Shipment
	SP	SPN	SP1	
Adenovirus 40/41	▮	▮		2
C. difficile antigen/toxin	▮	▮		2
Rotavirus	▮	▮		2
Shiga toxin	▮			2
Norovirus			▮	1

Program Information

- SP - Two 1.0-mL liquid specimens; for use with rapid or molecular testing methods; not available to international customers due to United States export law restrictions
- SPN - Two 1.0-mL liquid specimens; for use with rapid or molecular testing methods; intended for international laboratories
- SP1 - One 1.0-mL liquid specimen compatible with molecular methods only
- Two shipments per year

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Shiga Toxin ST

Analyte	Program Code	Challenges per Shipment
	ST	
Shiga toxin	▮	2

Program Information
- Two 0.5-mL liquid specimens
- For use with direct shiga toxin testing only; not compatible with culture methods, cytotoxicity assays, or PCR
- Not available to international customers due to United States export law restrictions
- Two shipments per year

Bacterial Vaginosis BV

Procedure	Program Code	Challenges per Shipment
	BV	
Bacterial vaginosis detection	▮	3

Program Information
- Three 1.0-mL liquid specimens
- For OSOM® BVBlue users
- Two shipments per year

Vaginitis Screen VS, VS1

Analyte	Program Code		Challenges per Shipment
	VS*	VS1**	
***Candida* sp.**	▮		5
Gardnerella vaginalis	▮		5
Trichomonas vaginalis	▮	▮	5

*The biohazard warning applies to Survey VS.
**Molecular users are encouraged to use *Trichomonas vaginalis*, Molecular TVAG on page 187.

Program Information
- VS - Five swabs for DNA probe technology; BD Affirm™ VP III probe detection method; three shipments per year

- VS1 - Five swabs for methods such as Sekisui OSOM *Trichomonas* Rapid Test, *Trichomonas vaginalis* methods; two shipments per year

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Molecular Vaginal Panel MVP

NEW

Analyte	Program Code	Challenges per Shipment
	MVP	
Candida species group	▮	5
Candida krusei	▮	5
Candida glabrata	▮	5
Trichomonas vaginalis	▮	5
Bacterial vaginosis	▮	5

Program Information

- Five liquid simulated vaginal specimens
- Designed for molecular methods such as BD MAX
- Three shipments per year

C. trachomatis and *N. gonorrhoeae* by NAA HC6, HC6X, HC7

Procedure	Program Code		Challenges per Shipment
	HC6,* HC6X*	HC7	
Nucleic acid amplification (NAA)	▮		5
Nucleic acid amplification (NAA/DNA)		▮	5

*The biohazard warning applies to Surveys HC6 and HC6X.

Program Information

- HC6 - Three swab specimens and two 1.0-mL simulated urine specimens
- HC6X - Three swab specimens; two 1.0-mL simulated urine specimens in duplicate
- Three shipments per year

- HC7 - Five 1.5-mL simulated body fluid specimens; designed for Cepheid users
- Three shipments per year

Vaginitis Screen, Virtual Gram Stain VS2

Procedure	Program Code	Challenges per Shipment
	VS2	
Interpretation of Gram-stained vaginal smears	▮	3

Additional Information

- See system requirements on page 13.

Program Information

- Three online, whole slide images
- Powered by DigitalScope technology
- Two activities per year; your CAP shipping contact will be notified via email when the activity is available

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Trichomonas vaginalis, Molecular TVAG

Analyte	Program Code	Challenges per Shipment
	TVAG	
Trichomonas vaginalis	▮	3

Program Information
- Three liquid specimens
- Designed for molecular techniques
- Two shipments per year

Vancomycin-resistant *Enterococcus* VRE

Procedure	Program Code	Challenges per Shipment
	VRE	
Vancomycin-resistant *Enterococcus* (VRE) detection	▮	2

Program Information
- Two swabs with diluents
- For use with molecular methods and culture-based testing
- Two shipments per year

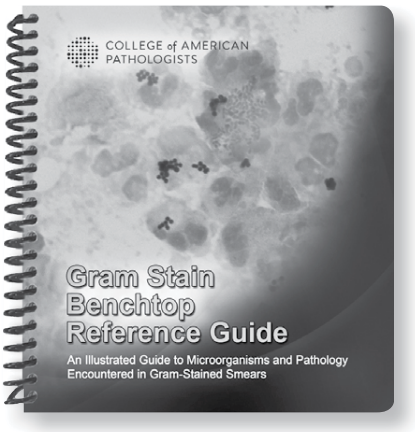
Identify microorganisms quickly and confidently

Gram Stain Benchtop Reference Guide is an illustrated guide to gram-positive and gram-negative organisms. Its rugged construction is well suited for students and medical technologists for heavy use at the workbench.

Features include:
- Theory and application of the Gram stain
- Detailed descriptions of microbial morphology, quantitation, and indicators of pathology
- Examples of more than 35 gram-positive and gram-negative organisms found in blood, body fluids, CSF, urine, and the genital and respiratory tracts
- Seven tabbed sections for easy reference

This sturdy, spiral-bound, laminated guide is conveniently sized at 6½" x 7".

Select it on your Surveys order form.



Item number: GSBRG
Spiral bound; 100 pages;
115+ images and tables; 2017

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Mycobacteriology

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Mycobacteriology E

Procedure	Program Code	Challenges per Shipment
	E	
Acid-fast smear	▮	1
Antimycobacterial susceptibility testing	▮	1 graded, 1 ungraded
Mycobacterial identification*	▮	5

*This procedure requires identification of *Mycobacterium tuberculosis*.

Program Information

- Five simulated clinical isolates with diluents and one specimen for performing an acid-fast bacillus smear
- Identification may be performed by culture or molecular methods
- Two shipments per year

Mycobacteriology—Limited E1

Procedure	Program Code	Challenges per Shipment
	E1	
Acid-fast smear	▮	5
Mycobacterial culture	▮	5

Program Information

- Five simulated specimens for acid-fast smears and/or for the determination of the presence or absence of acid-fast bacillus by culture
- Two shipments per year

Molecular MTB Detection and Resistance MTBR

Procedure	Program Code	Challenges per Shipment
	MTBR	
Mycobacterium tuberculosis detection	▮	3
Rifampin resistance	▮	3

Program Information

- Three 1.25-mL simulated sputum specimens for use with molecular methods
- Not suitable for culture
- Two shipments per year

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Mycology

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Mycology and Aerobic Actinomycetes F

Procedure	Program Code	Challenges per Shipment
	F	
Antifungal susceptibility testing	▮	1
Cryptococcal antigen detection	▮	2 per year
Mold and yeast identification	▮	5

Program Information

- Five loops for culture with diluents in duplicate and one 1.0-mL simulated cerebrospinal fluid specimen (A and B shipments only)
- Identification of yeasts, molds, and aerobic actinomycetes may be performed by molecular- and culture-based methods
- Three shipments per year

Yeast F1

Procedure	Program Code	Challenges per Shipment
	F1	
Antifungal susceptibility testing	▮	1
Cryptococcal antigen detection	▮	2 per year
Yeast identification	▮	5

Program Information

- Five loops for culture with diluents in duplicate and one 1.0-mL simulated cerebrospinal fluid specimen (A and B shipments only)
- Identification of yeast may be performed by molecular- and culture-based methods
- Three shipments per year

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Candida Culture F3

Procedure	Program Code	Challenges per Shipment
	F3	
Yeast identification	▮	5

Program Information
- Five loops for culture with diluents in duplicate
- Identification of *Candida* species may be performed by culture, molecular, and rapid methods
- Three shipments per year

Cryptococcal Antigen Detection CRYP

Procedure	Program Code	Challenges per Shipment
	CRYP	
Cryptococcal antigen	▮	5

Program Information
- Five 1.0-mL simulated cerebral spinal fluids
- Three shipments per year

Galactomannan FGAL

Analyte	Program Code	Challenges per Shipment
	FGAL	
Galactomannan - *Aspergillus*	▮	3

Program Information
- Three liquid specimens
- For use with methods such as Bio-Rad Platelia™
- Two shipments per year

Fungal Serology FSER

Procedure	Program Code	Challenges per Shipment
	FSER	
Serological detection of specific fungal antibodies	▮	3

Program Information
- Three serum specimens
- For use with immunodiffusion methods
- Designed for the detection of antibodies to *Aspergillus*, *Blastomyces*, *Coccidiodes*, and *Histoplasma*
- Two shipments per year

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Fungal Smear FSM

Procedure	Program Code	Challenges per Shipment
	FSM	
KOH preparation/calcofluor white	▮	3

Program Information
- Three slides
- Two shipments per year

India Ink IND

Procedure	Program Code	Challenges per Shipment
	IND	
India ink	▮	2

Program Information
- Two liquid specimens
- Two shipments per year

Pneumocystis PCP1, PCP2, PCP4

Procedure	Program Code			Challenges per Shipment
	PCP1	PCP2	PCP4	
PCP – Calcofluor white stain	▮			3
PCP – DFA stain		▮		3
PCP – GMS stain			▮	3

Program Information
- Three images, each available as photographs and online images for *Pneumocystis jirovecii*
- Two shipments per year

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Built upon a foundation of more than 15 years of proficiency testing data, this resource book is designed to assist pathologists and medical technologists in the laboratory identification of fungi using the most recent taxonomic classifications. The text highlights diagnostic clusters of incorrect identifications and addresses conceptual classification issues. Comprehensive and complete, this book merges in vitro mycology (colonies on plated media/LPAB preparations) with in vivo mycology (histology/cytology).

Select Color Atlas of Mycology (PUB226) on your Surveys order form.

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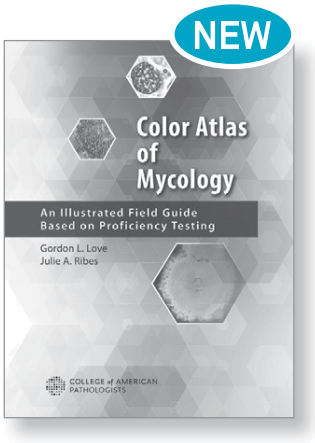

Item number: PUB226
Hardcover; 2018

Parasitology

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Parasitology P, P3, P4, P5

Procedure	Challenges per Shipment			
	Program Code			
	P	P3	P4	P5
Fecal suspension (wet mount)	2	5	2	
Fecal suspension (*Giardia* and/or *Cryptosporidium* immunoassay and modified acid-fast stain)	2	1	1	5
Giemsa-stained blood smear	1			
Preserved slide (for permanent stain)	2		3	

Additional Information

- The proficiency testing materials used for the Parasitology Surveys contain formalin as a preservative.
- Modified acid-fast stain results do not meet CLIA requirements for parasite identification.
- Number of specimen types are indicated in chart.

Program Information

- P - Five specimens consisting of thin and thick films for blood and tissue parasite identification; preserved slides for permanent stain; 0.75-mL fecal suspensions for direct wet mount examination, photographs, and/or online images; two 0.75-mL fecal suspensions for *Giardia* and/or *Cryptosporidium* immunoassay testing and modified acid-fast stain
- P3 - Five 0.75-mL fecal suspensions for direct wet mount examination, photographs, and/or online images; one 0.75-mL fecal suspension for *Giardia* and/or *Cryptosporidium* immunoassay testing and modified acid-fast stain
- P4 - Five specimens consisting of 0.75-mL fecal suspensions for direct wet mount examination, preserved slides for permanent stain, photographs, and/or online images; one 0.75-mL fecal suspension for *Giardia* and/or *Cryptosporidium* immunoassay testing and modified acid-fast stain
- P5 - Five 0.75-mL fecal suspensions for *Giardia* and/or *Cryptosporidium* immunoassay testing and modified acid-fast stain
- Three shipments per year

Blood Parasite BP

Procedure	Program Code	Challenges per Shipment
	BP	
Thin/thick blood film sets*	▮	5

*This Survey will include corresponding thick films when available.

Program Information
- Five Giemsa-stained blood film sets, photographs, and/or online images
- A variety of blood parasites, including *Plasmodium, Babesia, Trypanosoma,* and filarial worms
- Three shipments per year

Rapid Malaria RMAL

Procedure	Program Code	Challenges per Shipment
	RMAL	
Rapid malaria detection	▮	3

*Detects *Plasmodium falciparum* specific histidine-rich protein 2 (HRP2). May not be compatible with methods that use pLDH enzyme detection for mixed malaria infections.

Program Information
- Three 0.5-mL antigen specimens
- Two shipments per year

Expanded Parasitology PEX

Procedure	Program Code	Challenges per Shipment
	PEX	
Parasite identification	▮	3

This program provides an educational opportunity to challenge laboratory professionals' competency in the identification of parasites utilizing photo images.

Program Information
- Three images, each available as photographs and online images
- Two shipments per year

Ticks, Mites, and Other Arthropods TMO

Procedure	Program Code	Challenges per Shipment
	TMO	
Tick, mite, and arthropod identification	▮	3

Program Information
- Three images, each available as photographs and online images
- Two shipments per year

Worm Identification WID		
Procedure	**Program Code**	**Challenges per Shipment**
	WID	
Worm identification	▮	3

Program Information

- Three images, each available as photographs and online images
- Two shipments per year

Parasitology Benchtop Reference Guide (PBRG)

- More than 70 identifications for parasites commonly encountered in the clinical laboratory
- Detailed descriptions of the parasite morphology, ecology, and clinical significance
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  - Intestinal Helminths
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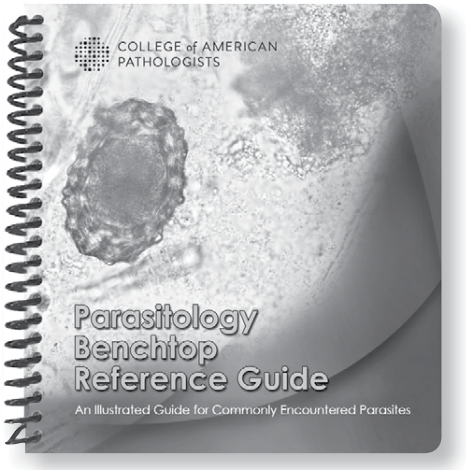

Item number: PBRG
Spiral bound; 98 pages;
70+ images and tables; 2014

Virology

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Guide for Ordering Regulated Virology Surveys

Program Code	Procedure	
	Viral Identification	Viral Antigen Detection
VR1	▮	
VR2		▮
VR4		▮
HC2		▮
HC4	▮	
ID3	▮	

Guide to Virology Testing

Use this flowchart as a guide for ordering the appropriate Virology Surveys for your laboratory's testing menu. For the subspecialty of virology, you must test five specimens per mailing. If you have any questions, please call the Customer Contact Center at 800-323-4040 or 847-832-7000 option 1.

For Comprehensive Virology Culture Testing	→	Select **VR1** (page 196)
For Virology Antigen Testing by Immunofluorescence	→	Select **VR2** (page 196)
For Viral Serology Testing	→	Select **VR3, VR3M** (page 204)
For Virology Antigen by EIA or Latex Agglutination	→	Select **VR4** (page 196)
For Herpes Simplex Virus Antigen Detection by DFA	→	Select **HC2** (page 197)
For Herpes Simplex Virus Culture Testing	→	Select **HC4** (page 197)
For Viral Load Testing	→	Select **HV2, HCV2, HBVL, HBVL5, VLS, VLS2** (pages 198-199)
For Nucleic Acid Amplification	→	Select **ID1, ID1T, ID2, VBDM** (pages 197, 198, 200)

Virology Culture VR1

Procedure	Program Code	Challenges per Shipment
	VR1	
Chlamydia trachomatis culture	▮	1
Viral isolation/identification	▮	5

Program Information

- Five 0.5-mL specimens for viral culture and one 0.5-mL specimen for *Chlamydia trachomatis* culture
- Three shipments per year

Virology Antigen Detection (DFA) VR2

Analyte/Procedure	Program Code	Challenges per Shipment		
	VR2	A	B	C
Adenovirus antigen	▮	1	1	
Cytomegalovirus antigen	▮	1	1	
Herpes simplex virus (HSV) antigen	▮		1	1
Influenza A antigen	▮	1		1
Influenza B antigen	▮		1	
Parainfluenza antigen	▮	1		1
Respiratory syncytial virus (RSV) antigen	▮	1		1
Varicella-zoster antigen	▮		1	1
Educational challenge	▮	1		

Program Information

- Five 5-well slide specimens
- Three shipments per year

Virology Antigen Detection (Non-DFA) VR4

Analyte	Program Code	Challenges per Shipment
	VR4	
Adenovirus (Not 40/41) antigen	▮	5
Influenza A antigen	▮	5
Influenza B antigen	▮	5
Respiratory syncytial virus (RSV) antigen	▮	5
Rotavirus antigen	▮	5

Program Information

- Five 1.5-mL specimens
- For use with enzyme immunoassay and/or latex agglutination methods
- Three shipments per year

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Herpes Simplex Virus HC2, HC4

Procedure	Program Code		Challenges per Shipment
	HC2	HC4*	
Antigen detection (DFA)	▮		5
Culture		▮	5

*The biohazard warning applies to Survey HC4.

Program Information
- HC2 - Five 5-well slide specimens
- HC4 - Five 0.5-mL lyophilized specimens
- Three shipments per year

Human Papillomavirus HPV

Analyte	Program Code	Challenges per Shipment
	HPV	
Human papillomavirus	▮	2

For laboratories using Digene, SurePath, and/or ThinPrep collection media, see page 279.

Program Information
- Two simulated cervical specimens contained in Digene transport media
- For Digene Hybrid Capture only
- Two shipments per year

Nucleic Acid Amplification, Viruses ID1, ID1T

Analyte	Program Code		Challenges per Shipment
	ID1	ID1T	
Cytomegalovirus	▮		1
Enterovirus	▮		1
Epstein-Barr virus	▮		1
Herpes simplex virus	▮		1
Human herpesvirus 6	▮		1
Human herpesvirus 8	▮		1
Parvovirus B19	▮		1
Varicella-zoster virus	▮		1
BK virus		▮	1
JC virus		▮	1

Program Information
- ID1- Eight 1.0-mL liquid specimens
- ID1T - Two 1.0-mL liquid specimens
- Two shipments per year

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Nucleic Acid Amplification, Respiratory ID2

Analyte	Program Code	Challenges per Shipment
	ID2	
Adenovirus	■	1
Coronavirus/Rhinovirus*	■	1
Human metapneumovirus	■	1
Influenza virus*	■	1
Parainfluenza virus	■	1
Respiratory syncytial virus (RSV)	■	1

*Coronavirus/Rhinovirus and Influenza virus will be included in the following shipments:

- Shipment A: Coronavirus and Influenza A
- Shipment B: Rhinovirus and Influenza B

Program Information

- Six 1.0-mL liquid specimens
- Two shipments per year

Influenza A, Influenza B, and RSV by Nucleic Acid Amplification ID3

Analyte	Program Code	Challenges per Shipment
	ID3	
Influenza A virus	■	5
Influenza B virus	■	5
Respiratory syncytial virus (RSV)	■	5

Program Information

- Five 1.0-mL liquid specimens
- Designed for molecular multiplex panel users
- Three shipments per year

Hepatitis Viral Load HCV2, HBVL, HBVL5

Procedure	Challenges per Shipment		
	Program Code		
	HCV2	HBVL	HBVL5
HCV genotyping	1		
HCV, qualitative	1		
HCV viral load	5		
HBV viral load		3	5

Program Information

- HCV2 - Five 1.5-mL liquid plasma specimens; three shipments per year
- HBVL - Three 1.25-mL plasma specimens; two shipments per year
- HBVL5 - Five 2.0-mL plasma specimens; three shipments per year

HIV Viral Load HV2, HIVG

Procedure	Program Code		Challenges per Shipment
	HV2	HIVG	
HIV-RNA viral load	▮		5
HIV genotyping		▮	1

Program Information

- HV2 - Five 2.5-mL EDTA plasma specimens
- HIVG - One 1.0-mL defibrinated plasma specimen
- Three shipments per year

Viral Load VLS, VLS2

Procedure	Program Code		Challenges per Shipment
	VLS	VLS2	
BK viral load	▮	▮	2
CMV viral load	▮	▮	2
EBV viral load	▮	▮	2
Adenovirus viral load		▮	2
HHV6 viral load		▮	2

Program Information

- VLS - Six 1.0-mL EDTA plasma specimens; two shipments per year
- VLS2 - Ten 2.0-mL EDTA plasma specimens; three shipments per year

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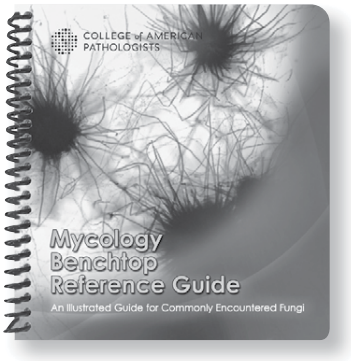

Item number: MBRG
Spiral bound; 92 pages; 70+ images; 2013

Viral Load Calibration Verification/Linearity LN38, LN39, LN45

Analyte	Program Code			
	LN38*	LN39	LN45	Target Ranges
CMV viral load	▮			316–1.0M IU/mL
HIV viral load		▮		50–5.0M IU/mL
HCV viral load			▮	50–280M IU/mL

*The biohazard warning applies to Survey LN38.

LN Express service is available.

Program Information

- LN38 - Six 1.5-mL frozen plasma specimens
- Two shipments per year; ships on dry ice

- LN39 - Six 2.5-mL plasma specimens
- LN45 - Seven 2.5-mL frozen DNA specimens
- Two shipments per year; ships on dry ice (dry ice does not apply to LN39)

Vector-Borne Disease—Molecular VBDM

Analyte	Program Code	Challenges per Shipment
	VBDM	
Zika virus	▮	3

Program Information

- Three 1.5-mL liquid specimens
- Two shipments per year

Uncover common infectious diseases with our uncommon resource

This resource book is rich in detailed information and real-world examples to help anatomic pathologists identify infectious organisms in tissue, study patterns of inflammation for clues, understand which stains are best for detecting specific micro-organisms, spot infectious disease mimics, and select ancillary methods of detection.

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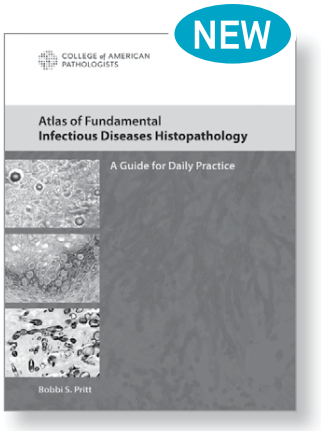

Item number: PUB127
Softcover; 304 pages; 800+ images and tables; 2018

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Multidiscipline Microbiology

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Guide for Ordering Regulated Molecular Multidiscipline Surveys

Program Code	Procedure	
	Bacterial Identification	Viral Identification
IDR	▮	▮
GIP5	▮	▮

Nucleic Acid Amplification, Organisms IDO, IDN

Analyte/Procedure	Program Code		Challenges per Shipment
	IDO	IDN	
Bordetella pertussis/parapertussis	▮	▮	1
*Legionella pneumophila/Chlamydophila pneumoniae**	▮	▮	1
Methicillin-resistant *Staphylococcus aureus*	▮	▮	1
Molecular typing (bacterial isolates)	▮	▮	1
Mycobacterium tuberculosis	▮		1
Mycoplasma pneumoniae	▮	▮	1
Vancomycin-resistant *Enterococcus*	▮	▮	1

Program Information

- IDO - Seven liquid or swab simulated clinical isolate specimens and two diluents
- IDN - Six liquid or swab simulated clinical isolate specimens and two diluents; designed for international laboratories that cannot receive MTB
- Two shipments per year

BIOHAZARD

**Legionella pneumophila/Chlamydophila pneumoniae* will be included in the following shipments:*

- Shipment A: *Chlamydophila pneumoniae*
- Shipment B: *Legionella pneumophila*

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BIOHAZARD Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Meningitis/Encephalitis Panel IDME

Analyte	Program Code	Challenges per Shipment
	IDME	
Escherichia coli K1	▮	3
Haemophilus influenzae	▮	3
Listeria monocytogenes	▮	3
Neisseria meningitidis	▮	3
Streptococcus agalactiae	▮	3
Streptococcus pneumoniae	▮	3
Cytomegalovirus (CMV)	▮	3
Enterovirus	▮	3
Herpes simplex virus 1 (HSV-1)	▮	3
Herpes simplex virus 2 (HSV-2)	▮	3
Human herpesvirus 6 (HHV-6)	▮	3
Human parechovirus	▮	3
Varicella-zoster virus (VZV)	▮	3
Cryptococcus neoformans/gattii	▮	3

Program Information

- Three 1.0-mL liquid specimens
- Designed for molecular multiplex panel users
- Two shipments per year

Infectious Disease, Respiratory Panel IDR

Analyte	Program Code	Challenges per Shipment
	IDR	
Adenovirus	▮	5
Bocavirus	▮	5
Bordetella (pertussis, parapertussis, bronchiseptica, holmesii)	▮	5
Chlamydophila pneumoniae	▮	5
Coronavirus	▮	5
Human metapneumovirus	▮	5
Influenza A	▮	5
Influenza B	▮	5
Legionella pneumophila	▮	5
Mycoplasma pneumoniae	▮	5
Parainfluenza type 1, 2, 3	▮	5
Parainfluenza type 4	▮	5
Respiratory syncytial virus (RSV)	▮	5
Rhinovirus/Enterovirus	▮	5

Program Information

- Five 1.0-mL liquid specimens
- Designed for molecular multiplex panel users
- Three shipments per year

Gastrointestinal Panel GIP5, GIP

Analyte	Challenges per Shipment	
	Program Code	
	GIP5 NEW	GIP
Adenovirus	5	3
Astrovirus	5	3
Campylobacter	5	3
Clostridium difficile, toxin A/B	5	3
Cryptosporidium	5	3
Cyclospora cayetanensis	5	3
Entamoeba histolytica	5	3
Enteroaggregative *E. coli* (EAEC)	5	3
Enteropathogenic *E. coli* (EPEC)	5	3
Enterotoxigenic *E. coli* (ETEC) LT/ST	5	3
***Escherichia coli* O157**	5	3
Giardia	5	3
Norovirus GI/GII	5	3
Plesiomonas shigelloides	5	3
Rotavirus A	5	3
Salmonella	5	3
Sapovirus	5	3
Shiga-like toxin producing *E. coli* (STEC) stx1/stx2	5	3
***Shigella*/Enteroinvasive *E. coli* (EIEC)**	5	3
Shigella	5	3
Vibrio cholerae	5	3
Yersinia enterocolitica	5	3

Note: Only GIP5 analytes in **bold** type will meet CMS requirements for bacteriology and virology identification.

Program Information

- GIP5 - Five 1.0-mL simulated stool specimens; three shipments per year
- GIP - Three 1.0-mL simulated stool specimens; two shipments per year
- Designed for molecular multiplex panel users
- Not available to international customers due to United States export law restrictions

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Infectious Disease Serology

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Infectious Disease Serology VR3, VR3M

Analyte	Program Code		Challenges per Shipment
	VR3	VR3M	
Cytomegalovirus (CMV) – IgG, IgM, and total antibodies	▮		1
Epstein-Barr virus (EBV) – VCA – IgG, IgM EBNA – IgG, IgM, and total antibodies EA – IgG	▮		1
Helicobacter pylori – IgG, IgA, and total antibodies	▮		1
Herpes simplex virus (HSV) – IgG antibody	▮		1
Mycoplasma pneumoniae – IgG, IgM, and total antibodies	▮		1
Mumps – IgG		▮	1
Rubeola virus (English measles) – IgG antibody	▮		1
Toxoplasma gondii – IgG, IgM, and total antibodies	▮		1
Varicella-zoster virus – IgG and total antibodies	▮		1

Program Information

- VR3 - Eight 0.5-mL lyophilized defibrinated plasma specimens
- VR3M - One 0.5-mL lyophilized defibrinated plasma specimen
- Two shipments per year

Tick-Transmitted Diseases TTD

Analyte	Program Code	Challenges per Shipment
	TTD	
Antibodies to tick-transmitted disease organisms	▮	3

Program Information

- Three 0.4-mL liquid specimens
- Designed for the detection of antibodies to *Borrelia burgdorferi*, *Babesia microti*, and *Anaplasma phagocytophilum*
- Two shipments per year

16 Immunology and Flow Cytometry

The CAP broadens its network of laboratory experts through its collaborations.

Among the organizations with which we partner:

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- American College of Medical Genetics and Genomics (ACMG)
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- National Society for Histotechnology (NSH)

Immunology and Flow Cytometry

Immunology

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Immunology
ANA, ASO, CRP, HCG, IM, RF/RFX, RUB/RUBX, IL

Analyte	Program Code								Challenges per Shipment
	ANA	ASO	CRP	HCG	IM	RF/ RFX	RUB/ RUBX	IL	
Antinuclear antibody (ANA)*	▮							▮	5
ANA dry challenge	▮							▮	1
Antistreptolysin O (ASO)*		▮						▮	5
C-reactive protein, qualitative/quantitative			▮					▮	2
hCG, serum, qualitative/ quantitative				▮				▮	5
Infectious mononucleosis					▮			▮	5
Rheumatoid factor*						▮		▮	5
Rubella (IgG)*							▮	▮	5

***ANA, ASO, Rheumatoid factor,** and **Rubella** are regulated analytes and are graded for both qualitative and quantitative methods. Semiquantitative and/or titer results for these analytes are ungraded/educational in this Survey and do not meet regulatory requirements.

Program Information

- ANA and RUB - Five 0.5-mL serum specimens
- ANA - Three educational pattern interpretation dry challenges per year
- ASO, HCG, and RF - Five 1.0-mL serum specimens
- CRP - Two 0.5-mL serum specimens; not appropriate for high-sensitivity CRP (hsCRP) methods
- IM - Five 0.6-mL serum specimens
- RFX - All Survey RF specimens in duplicate
- RUBX - All Survey RUB specimens in duplicate
- IL - All immunology specimens except RFX and RUBX
- Three shipments per year

CE credit

Immunology, General IG/IGX

Analyte	Program Code	Challenges per Shipment
	IG/IGX	
Alpha$_1$-antitrypsin	▮	5
Complement C3	▮	5
Complement C4	▮	5
Haptoglobin	▮	5
IgA	▮	5
IgE	▮	5
IgG	▮	5
IgM	▮	5
Total kappa/lambda ratio	▮	5

Program Information

- IG - Ten 1.0-mL serum specimens
- IGX - All Survey IG specimens in duplicate
- Three shipments per year

CE credit

Immunology, Special; Immunology Special, Limited; and *H. pylori* IgG Antibody S2, S4, S5

Analyte	Program Code			Challenges per Shipment		
	S2	S4	S5	A	B	C
Anticentromere antibody	▮			1		1
Anti-DNA antibody double-stranded	▮	▮		1	1	1
Antiglomerular basement membrane (GBM), IgG antibody	▮				1	1
Antimitochondrial antibody	▮			1	1	1
Antineutrophil cytoplasmic antibody (ANCA, anti-MPO, anti-PR3)	▮			1	1	
Anti-RNP antibody	▮			1	1	1
Anti-Sm antibody	▮			1	1	1
Anti-Sm/RNP antibody	▮			1	1	1
Antismooth muscle antibody	▮			1	1	1
Anti-SSA antibody	▮			1	1	1
Anti-SSB antibody	▮			1	1	1
Anti-SSA/SSB antibody	▮			1	1	1
Antithyroglobulin antibody	▮	▮		1	1	1
Antithyroid microsomal antibody	▮	▮		1	1	1
Antithyroid peroxidase antibody	▮	▮		1	1	1
Ceruloplasmin	▮	▮		1	1	1
Haptoglobin	▮	▮		1	1	1
Helicobacter pylori, IgG antibody	▮	▮	▮	1 2	1 2	
IgD	▮	▮		1	1	1
IgG	▮	▮		1	1	1
IgG subclass proteins	▮	▮		1	1	1
Prealbumin (transthyretin)	▮	▮		1	1	1
Total kappa/lambda ratio	▮	▮		1	1	1
Transferrin	▮	▮		1	1	1

Survey S2 is not appropriate for antimitochondrial antibody assays that are specific for the M2 antibody. Refer to Survey H on page 208.

Program Information

- S2 - A minimum of seven (0.5- to 1.0-mL/vial) serum specimens
- S4 - A minimum of three (0.5- to 1.0-mL/vial) serum specimens
- S2 and S4 - Three shipments per year
- S5 - Two 1.0-mL serum specimens; two shipments per year

CE credit

Infectious Mononucleosis, Waived IMW

Analyte	Program Code	Challenges per Shipment
	IMW	
Infectious mononucleosis, waived	▮	3

Program Information

- Three 0.6-mL serum specimens
- Two shipments per year

Alpha-2-Macroglobulin A2MG

Analyte	Program Code	Challenges per Shipment
	A2MG	
Alpha-2-macroglobulin	▮	3

Program Information
- Three 0.5-mL serum specimens
- Two shipments per year

Antichromatin Antibody ACA

Analyte	Program Code	Challenges per Shipment
	ACA	
Antichromatin antibody	▮	3

Program Information
- Three 0.5-mL serum specimens
- Two shipments per year

Antifilamentous Actin IgG Antibody FCN

Analyte	Program Code	Challenges per Shipment
	FCN	
Antifilamentous actin (f-actin) IgG antibody	▮	3

Program Information
- Three 0.5-mL serum specimens
- Two shipments per year

Antihistone Antibody AHT

Analyte	Program Code	Challenges per Shipment
	AHT	
Antihistone antibody	▮	3

Program Information
- Three 0.5-mL serum specimens
- Two shipments per year

Antimitochondrial M2 Antibody H

Analyte	Program Code	Challenges per Shipment
	H	
Antimitochondrial M2 antibody (AMA-M2)	▮	2

Program Information
- Two 1.0-mL serum specimens
- Two shipments per year

Autoimmune Gastritis Markers APC

Analyte	Program Code	Challenges per Shipment
	APC	
Antiparietal cell antibody	▮	2
Anti-intrinsic factor antibody	▮	2

Program Information
- Two 1.0-mL serum specimens
- Two shipments per year

Antiphospholipid Antibody ACL

Analyte	Program Code	Challenges per Shipment
	ACL	
Anticardiolipin antibody (polyclonal, IgG, IgM, and IgA)	▮	3
Beta-2-glycoprotein I (polyclonal, IgG, IgM, and IgA)	▮	3

Program Information
- Three 0.5-mL lyophilized serum specimens
- Two shipments per year

Antiphosphatidylserine Antibody APS

Analyte	Program Code	Challenges per Shipment
	APS	
Anticardiolipin antibody (polyclonal, IgG, IgM, and IgA)	▮	3
Antiphosphatidylserine antibody (IgG, IgM, and IgA)	▮	3
Beta-2-glycoprotein I (polyclonal, IgG, IgM, and IgA)	▮	3

Program Information
- Three 0.5-mL lyophilized serum specimens
- Two shipments per year

Antiribosomal P Antibody ARP

Analyte	Program Code	Challenges per Shipment
	ARP	
Antiribosomal P antibody	▮	3

Program Information
- Three 0.5-mL serum specimens
- Two shipments per year

Anti-*Saccharomyces cerevisiae* Antibody ASC

Analyte	Program Code	Challenges per Shipment
	ASC	
Anti-*Saccharomyces cerevisiae* antibody (IgG and IgA)	▮	2

Program Information
- Two 1.0-mL serum specimens
- Two shipments per year

Celiac Serology CES, CESX

Analyte	Program Code		Challenges per Shipment
	CES	CESX	
Antiendomysial antibody (IgA and IgG)	▮	▮	3
Antiendomysial antibody screen (IgA and IgG)	▮	▮	3
Antigliadin antibody (IgA and IgG)	▮	▮	3
Antideamidated gliadin peptide (DGP) antibody (IgA and IgG)	▮	▮	3
Anti-DGP antibody screen (IgA and IgG)	▮	▮	3
Antitissue transglutaminase (tTG) antibody (IgA and IgG)	▮	▮	3
Anti-DGP and anti-tTG antibody screen (IgA and IgG)	▮	▮	3

Program Information

- CES - Three 0.3-mL serum specimens
- CESX - All Survey CES specimens in triplicate
- Two shipments per year

Cyclic Citrullinated Peptide Antibody (Anti-CCP) CCP

Analyte	Program Code	Challenges per Shipment
	CCP	
Anti-CCP	▮	2

Program Information

- Two 1.0-mL serum specimens
- Two shipments per year

CE credit

Cytokines CTKN

Analyte	Program Code	Challenges per Shipment
	CTKN	
Interferon (IFN)-gamma	▮	3
Interleukin (IL)-1 beta	▮	3
IL-2	▮	3
IL-6	▮	3
IL-8	▮	3
IL-10	▮	3
Tumor necrosis factor (TNF)-alpha	▮	3
Vascular endothelial growth factor (VEGF)	▮	3

Program Information

- Nine 2.0- to 3.0-mL lyophilized serum specimens
- Two shipments per year

Diagnostic Allergy SE

Analyte/Procedure	Program Code	Challenges per Shipment
	SE	
IgE, multiallergen screen, qualitative	▮	5
IgE, total	▮	5
Specific allergens	▮	25

Program Information
- Five 2.0-mL serum specimens
- Includes common allergens from North America as well as less frequently tested allergens
- Three shipments per year

High-Sensitivity C-Reactive Protein HSCRP

Analyte	Program Code	Challenges per Shipment
	HSCRP	
High-sensitivity C-reactive protein	▮	3

Program Information
- Three 0.5-mL liquid serum specimens
- Two shipments per year

Liver-Kidney Microsomal Antibody (Anti-LKM) LKM

Analyte	Program Code	Challenges per Shipment
	LKM	
Anti-LKM	▮	2

Program Information
- Two 1.0-mL serum specimens
- Two shipments per year

M. tuberculosis-Stimulated Infection Detection QF

Analyte	Program Code	Challenges per Shipment
	QF	
M. tuberculosis	▮	2

Program Information
- Two 1.0-mL lyophilized serum specimens and one lyophilized mitogen control
- For use with the QuantiFERON®-TB Gold and Gold Plus methods only
- Two shipments per year

Rheumatic Disease Special Serologies RDS

Analyte	Program Code	Challenges per Shipment
	RDS	
Anti-Jo-1 (antihistidyl t-RNA synthetase)	▮	1
Anti-Scl-70 (anti-DNA topoisomerase)	▮	1

Program Information
- Two 1.0-mL serum specimens
- Two shipments per year

CE credit

Syphilis Serology G

Analyte	Program Code	Challenges per Shipment
	G	
Syphilis	▮	5

Use with VDRL, RPR, MHA-TP/TP-PA/PK-TP/TPHA, EIA, CMIA, multiplex flow immunoassay, TP-LIA IgG, FTA-ABS, and USR methods. Laboratories performing syphilis serology on CSF specimens may also use this Survey.

Program Information
- Five 1.5-mL serum specimens
- Three shipments per year

CE credit

Total Hemolytic Complement CH50

Analyte	Program Code	Challenges per Shipment
	CH50	
Total hemolytic complement, 50% lysis	▮	2
Total hemolytic complement, 100% lysis	▮	2

Program Information
- Two 0.5-mL lyophilized serum specimens
- Two shipments per year

Viscosity V

Analyte	Program Code	Challenges per Shipment
	V	
Viscosity	▮	2

Program Information
- Two 10.0-mL serum specimens
- Two shipments per year

Serum Free Light Chains SFLC

Analyte	Program Code	Challenges per Shipment
	SFLC	
Kappa serum free light chain	▮	3
Lambda serum free light chain	▮	3
Kappa/lambda serum free light chain ratio and ratio interpretation	▮	3

Program Information
- Three 1.0-mL serum specimens
- Two shipments per year

Flow Cytometry

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Flow Cytometry FL, FL1, FL2

Procedure	Program Code			Challenges per Shipment
	FL	FL1	FL2	
DNA content and cell cycle analysis	▮		▮	3
Lymphocyte immunophenotyping	▮	▮		3

These Surveys are not appropriate for hematology analyzers with monoclonal antibody analysis.

Program Information

- FL1 - Three 1.5-mL whole blood specimens
- FL2 - Three 1.1-mL specimens; two fixed cell line specimens and one calibrator for DNA content and cell cycle analysis
- FL - All Survey FL1 and FL2 specimens
- Three shipments per year

Flow Cytometry—Immunophenotypic Characterization of Leukemia/Lymphoma FL3

Procedure	Program Code	Challenges per Shipment
	FL3	
Leukemia/lymphoma	▮	2

Survey FL3 is appropriate for laboratories that perform technical component-only flow cytometric testing.

Program Information

- Two 2.5-mL whole blood specimens and/or cell lines simulating leukemia/lymphoma; images of tissue sections, bone marrow, and/or peripheral blood smears with clinical histories
- Online, whole slide images powered by DigitalScope® technology
- Two shipments per year

Flow Cytometry, CD34+ FL4

Analyte	Program Code	Challenges per Shipment
	FL4	
CD34+	▮	2

Program Information

- Two 1.5-mL stabilized human CD34+ specimens
- Two shipments per year

Flow Cytometry, Interpretation Only FL5

Procedure	Program Code	Challenges per Shipment
	FL5	
Flow cytometry, interpretation only of leukemia/lymphoma	▮	3

Survey FL5 is for laboratories that receive flow cytometry analyses from referring laboratories to perform the interpretation of patient results.

Program Information

- Three cases consisting of gated dot plots, clinical histories, and pertinent laboratory data, as well as images of tissue sections, bone marrow, and/or peripheral blood smears
- Online, whole slide images powered by DigitalScope technology
- Two shipments per year

Flow Cytometry—B-ALL Minimal Residual Disease BALL

Analyte	Program Code	Challenges per Shipment
	BALL	
B-ALL minimal residual disease	▮	3

Survey BALL is intended for laboratories that currently or will begin to perform minimal residual disease (MRD) testing (rare event analysis) for B lymphoblastic leukemia/lymphoma. The cases presented will be based on Children's Oncology Group (COG) approved B-ALL MRD method.

Minimum Requirements

- For ungated list mode files, each challenge will include 2-3 "virtual tubes" performed by a 6-color method. The participant will download the files from a CAP website and analyze the data on a MAC or PC using standard software, including FlowJo, FACSDiva, Kaluza, Woodlist, etc. The files will be large as each tube will have collected hundreds of thousands of events. Boolean gating will be necessary to see if there is an atypical population.
- Demo list mode files are available for download to determine software compatibility prior to enrollment. Go to fileshare.cap.org (user name: demo-b-all-mrd; password: ProductTest1).

Program Information

- One case consisting of gated dot plots
- Two cases with ungated list mode files that allow users to examine gating strategies and interpret antibody staining patterns; files are in standard format (see Minimum Requirements)
- Two shipments per year

Flow Cytometry—Plasma Cell Neoplasms PCNEO

Analyte	Program Code	Challenges per Shipment
	PCNEO	
Plasma cell neoplasms	▮	3

Survey PCNEO is especially helpful for laboratories that have leukemia/lymphoma assays that target plasma cell neoplasms, including cytoplasmic light chain staining.

Program Information

- One 2.5-mL whole blood specimen and/or cell line simulating a plasma cell neoplasm with clinical history and pertinent laboratory data
- Two cases consisting of gated dot plots, clinical histories, and pertinent laboratory data
- Each challenge includes images of tissue sections, bone marrow, and/or peripheral blood smears
- Online, whole slide images powered by DigitalScope technology
- Two shipments per year

Flow Cytometry—Immunophenotypic Characterization of Paroxysmal Nocturnal Hemoglobinuria PNH

Analyte	Program Code	Challenges per Shipment
	PNH	
PNH RBC analysis	▮	2
PNH WBC analysis	▮	2

Additional Information

- The PNH Survey complies with the recommendations from the *Guidelines for the Diagnosis and Monitoring of Paroxysmal Nocturnal Hemoglobinuria and Related Disorders by Flow Cytometry* for RBC and WBC analysis. Due to the unique nature of these human, donor-based materials, the shipping dates are subject to change. If this should occur, the CAP will provide notification prior to the originally scheduled shipping date.
- This Survey is appropriate for high-sensitivity testing (≤0.01% PNH type clone in red cells and/or granulocytes).

Program Information

- Two 0.5-mL whole blood specimens for RBC and WBC analysis
- Two shipments per year

Fetal Red Cell Detection HBF

Procedure	Program Code	Challenges per Shipment
	HBF	
Kleihauer-Betke and flow cytometry	▮	2
Rosette fetal screen	▮	2
Acid elution whole slide image	▮	1

Program Information

- Two 1.2-mL liquid whole blood specimens
- Not designed for F cell quantitation
- Two online, whole slide images per year with optional grids for cell counting
- Powered by DigitalScope® technology
- Two shipments per year

Rare Flow Antigen Validation RFAV1, RFAV2

Analyte	Program Code		Challenges per Shipment
	RFAV1	RFAV2	
CD1a	▮		1
CD103		▮	1

Surveys RFAV1 and RFAV2 do not meet the regulatory requirements for proficiency testing.

Additional Information

These Surveys meet the CAP Accreditation Checklist item FLO.23737, which requires semiannual testing of antigens.

Program Information

- RFAV1 - One 4.5-mL cell line specimen
- RFAV2 - One 1.0-mL stabilized cell specimen
- Two shipments per year

ZAP-70/CD49d Analysis by Flow Cytometry ZAP70

Analyte	Program Code	Challenges per Shipment
	ZAP70	
Zeta chain-associated protein kinase 70	▮	3
CD49d	▮	3

Additional Information

- This Survey tests for intracellular ZAP-70 staining of a cell line. It allows for assessment of the laboratory's staining techniques and the antibody clone used for ZAP-70 detection.
- CD49d is an important prognostic marker for CLL by flow cytometry. This Survey allows assessment of the laboratory's ability to detect CD49d.

Program Information

- Three 4.5-mL cell line specimens
- Two shipments per year

17 Transfusion Medicine, Viral Markers, and Parentage Testing

Confirm all your instruments are in working order.

Monitor performance across multiple instruments between proficiency testing events with Quality Cross Check.

- Gain an early indication of instrument problems.
- Assess comparability across multiple automated and manual methods with the new Quality Cross Check—Transfusion Medicine program (JATQ).

Transfusion Medicine, Viral Markers, and Parentage Testing

New Programs NEW

Transfusion Medicine

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Transfusion Medicine J, J1

Procedure	Program Code		Challenges per Shipment
	J	J1	
ABO grouping	▮	▮	5
Rh typing	▮	▮	5
Antibody detection	▮		5
Antibody identification	▮		5
Compatibility testing	▮		5
Red blood cell antigen typing	▮		1

Program Information

- J - Five 2.0-mL 3% red blood cell suspensions; five 3.0-mL corresponding serum specimens; one 2.0-mL donor red blood cell suspension
- J1 - Five 2.0-mL 3% red blood cell suspensions; five 3.0-mL corresponding serum specimens
- Three shipments per year

CE credit

Transfusion Medicine—Educational Challenge JE1

Procedure	Program Code	Challenges per Shipment
	JE1	
Educational challenge	▮	1

Program Information

- One educational challenge, which may consist of a paper challenge and/or wet specimen for ABO grouping, Rh typing, antibody detection, antibody identification, compatibility testing, antigen typing, and/or direct antiglobulin testing
- Must order in conjunction with Survey J
- Three shipments per year

CE credit

Electronic Crossmatch EXM

Procedure	Program Code	Challenges per Shipment
	EXM	
Electronic crossmatch	▮	3

Survey EXM assists laboratories in monitoring the performance of their electronic crossmatching system.

Program Information

- Three simulated, ISBT-128 labeled donor unit challenges and three corresponding red blood cell suspensions
- Must order in conjunction with Survey J
- Two shipments per year

CE credit

Transfusion Medicine—Automated JAT

Procedure	Program Code	Challenges per Shipment
	JAT	
ABO grouping	▮	5
Antibody detection	▮	5
Antibody identification	▮	5
Compatibility testing	▮	5
Rh typing	▮	5

Program Information

- Five bar-coded 4.0-mL 18%–22% whole blood specimens and one 4.0-mL 18%–22% whole blood specimen for compatibility testing
- Three shipments per year

CE credit

Transfusion Medicine—Automated Education Challenge JATE1

Procedure	Program Code	Challenges per Shipment
	JATE1	
Eduational challenge	▮	1

Program Information

- One educational challenge, which may consist of a paper challenge and/or wet specimen for ABO grouping, Rh typing, antibody detection, antibody identification, and/or compatibility testing
- Must order in conjunction with Survey JAT
- Three shipments per year

CE credit

Quality Cross Check—Transfusion Medicine JATQ

NEW

Procedure	Program Code	Challenges per Shipment
	JATQ	
ABO grouping	▮	3
Antibody detection	▮	3
Rh typing	▮	3

This program does not meet regulatory requirements for proficiency testing; see Survey JAT on page 219. For additional information about the Quality Cross Check program, see page 40.

Program Information

- Three 7.0-mL 13-17% whole blood specimens
- May be used with automated and manual procedures
- Two shipments per year

Electronic Crossmatch, Automated EXM2

Procedure	Program Code	Challenges per Shipment
	EXM2	
Electronic crossmatch	▮	3

Survey EXM2 assists laboratories in monitoring the performance of their electronic crossmatching system.

Program Information

- Three simulated, ISBT-128 labeled donor unit challenges and three corresponding red blood cell suspensions
- Must order in conjunction with Survey JAT
- Two shipments per year

CE credit

ABO Subgroup Typing ABOSG

Procedure	Program Code	Challenges per Shipment
	ABOSG	
ABO subgroup typing	▮	3
Rh typing	▮	3

Program Information

- Three 2.0-mL 3% red blood cell suspensions; three 2.0-mL corresponding serum specimens
- Two shipments per year

Red Blood Cell Antigen Genotyping RAG

Procedure	Program Code	Challenges per Shipment
	RAG	
Red blood cell antigen genotype with predictive phenotype	▮	3

Program Information

- Three 2.0-mL whole blood specimens
- Two shipments per year

Red Blood Cell Antigen Typing RBCAT

Procedure	Program Code	Challenges per Shipment
	RBCAT	
Red blood cell antigen typing	▮	2

Additional Information

Survey RBCAT is for donor centers and transfusion laboratories performing non-automated/manual red cell phenotyping for the management of patients with complex serology (ie, alloimmunization, sickle cell disease, warm autoimmune hemolytic anemia). Challenges will include antigens such as Rh, Kell, MNSs, Duffy, and Kidd blood group system.

Program Information

- Two 2.0-mL 2%–4% red blood cell suspensions
- Two shipments per year

Antibody Titer ABT, ABT1, ABT2, ABT3

Procedure	Program Code				Challenges per Shipment
	ABT	ABT1	ABT2	ABT3	
Anti-A titer	▮	▮			1
Anti-B titer				▮	1
Anti-D titer	▮		▮		1

Program Information

- ABT - One 2.0-mL plasma specimen for anti-A titer with one corresponding titer cell (3%–4% red blood cell suspension); one 2.0-mL plasma specimen for anti-D titer with one corresponding titer cell (3%–4% red blood cell suspension)
- ABT1- One 2.0-mL plasma specimen for anti-A titer with one corresponding titer cell (3%–4% red blood cell suspension)
- ABT2 - One 2.0-mL plasma specimen for anti-D titer with one corresponding titer cell (3%–4% red blood cell suspension)
- ABT3 - One 2.0-mL plasma specimen for anti-B titer with one corresponding titer cell (3%–4% red blood cell suspension)
- Two shipments per year

Transfusion-Related Cell Count TRC

Procedure	Program Code	Challenges per Shipment
	TRC	
Platelet count (platelet-rich plasma)	▮	5
WBC count	▮	4
Dry challenge	▮	2

WBC counts must be performed using a Nageotte chamber, fluorescence microscopy, or by flow cytometry.

Program Information
- Five 1.2-mL suspensions of platelet-rich plasma
- Two 1.0-mL vials leukocyte-reduced platelet material
- Two 1.0-mL vials leukocyte-reduced red blood cells
- Three shipments per year

Direct Antiglobulin Testing DAT

Procedure	Program Code	Challenges per Shipment
	DAT	
Direct antiglobulin testing	▮	3

Program Information
- Three 2.0-mL 3% red blood cell suspensions
- For use with manual method
- Two shipments per year

Eluate Survey ELU

Procedure	Program Code	Challenges per Shipment
	ELU	
Antibody elution	▮	2

Program Information
- Two 2.0-mL 50% red blood cell suspensions
- Two shipments per year

Fetal Red Cell Detection HBF

Procedure	Program Code	Challenges per Shipment
	HBF	
Kleihauer-Betke and flow cytometry	▮	2
Rosette fetal screen	▮	2
Acid elution whole slide image	▮	1

Program Information
- Two 1.2-mL liquid whole blood specimens
- Not designed for F cell quantitation
- Two online, whole slide images per year with optional grids for cell counting
- Powered by DigitalScope® technology
- Two shipments per year

Platelet Serology PS

Procedure	Program Code	Challenges per Shipment
	PS	
Antibody detection	▮	3
Platelet crossmatch	▮	3
Platelet antibody identification	▮	3

A low concentration of sodium azide may be present in the specimens and may affect lymphocytotoxicity methods.

Program Information

- Three 3.0-mL plasma specimens
- For use with solid-phase red cell adherence, flow cytometry, and EIA/ELISA methods
- Two shipments per year

Transfusion Medicine Comprehensive—Competency Assessment TMCA

Procedure	Program Code	Challenges per Shipment
	TMCA	
ABO grouping	▮	2
Antibody detection	▮	2
Antibody identification	▮	2
Compatibility testing	▮	2
Rh typing	▮	2

Survey TMCA does not meet the regulatory requirements for proficiency testing.

Program Information

- Two 2.0-mL 3% red blood cell suspensions
- Two 3.0-mL corresponding serum specimens
- One 2.0-mL donor 3% red blood cell suspension
- Three shipments per year; order shipments individually or for an entire year

Direct Antiglobulin Test—Competency Assessment TMCAD

Procedure	Program Code	Challenges per Shipment
	TMCAD	
Direct antiglobulin testing	▮	2

Survey TMCAD does not meet the regulatory requirements for proficiency testing.

Program Information

- Two 2.0-mL 3% red blood cell suspensions
- Two shipments per year; order shipments individually or for an entire year

Test your diagnostic skills as a pathologist with CPIP

Online, hands-on and interactive, the Clinical Pathology Improvement Program (CPIP) enables pathologists to sharpen their diagnostic skills in real time by working through an actual case. Each month, you will receive a new case, including related images and clinical background. As the case unfolds, more information is revealed, just as in the laboratory. Participants who successfully complete the posttest may apply their earned credits to their Continuing Certification (CC), formerly known as Maintenance of Certification (MOC) SAM requirements. Enjoy a full year of CPIP and earn up to 15 CME/SAM credits.

Choose code CPIP/CPIP1 on your Surveys order form.

Eluate Competency Assessment TMCAE

Procedure	Program Code	Challenges per Shipment
	TMCAE	
Antibody elution	▮	2

Survey TMCAE does not meet the regulatory requirements for proficiency testing.

Program Information

- Two 2.0-mL 50% red blood cell suspensions
- Two shipments per year; order shipments individually or for an entire year

Fetal Red Cell Quantitation—Competency Assessment TMCAF

Procedure	Program Code	Challenges per Shipment
	TMCAF	
Kleihauer-Betke, flow cytometry	▮	2
Rosette fetal screen	▮	2
Acid elution whole slide image	▮	1

Survey TMCAF does not meet the regulatory requirements for proficiency testing.

Program Information

- Two 1.2-mL whole blood specimens
- Two online, whole slide images per year with optional grids for cell counting
- Powered by DigitalScope technology
- Two shipments per year; order shipments individually or for an entire year

Have you created or updated your CAP Profile?

Each laboratory staff member should have their own profile. Your profile is transferrable when you leave your current position. Use it to maintain information about yourself, including:

- Business affiliations
- Certifications
- Contact preferences
- Inspector-related information
- Personal contact information
- Specialties and skills
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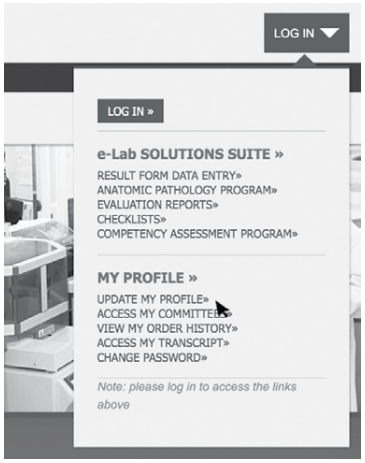


Cord Blood and Stem Cell Processing CBT, SCP

Procedure	Program Code		Challenges per Shipment
	CBT	SCP	
Absolute CD3		▮	2
Absolute CD34	▮	▮	2
Absolute CD45	▮		2
Bacterial culture	▮	▮	2
%CD3+		▮	2
%CD34+	▮	▮	2
%CD45+	▮	▮	2
BFU-E	▮	▮	2
CFU-E	▮	▮	2
CFU-GEMM	▮	▮	2
CFU-GM	▮	▮	2
Total CFC	▮	▮	2
Fungal culture	▮	▮	2
Hematocrit	▮	▮	2
Hemoglobin	▮	▮	2
Mononuclear cell count	▮	▮	2
Nucleated red cells	▮	▮	2
Number of CD34 positive events	▮	▮	2
Number of CD45 positive events	▮	▮	2
Total nucleated cells	▮	▮	2
Viability	▮	▮	2
WBC count	▮	▮	2

Additional Information

- Because these materials are human donor-based, the ship date is subject to change. If this should occur, notification will be provided prior to the scheduled date. In some instances, the program may ship in two installments.
- Due to material stability, no replacements will be available.
- See International Shipping information section in the Ordering Information Supplement regarding additional dangerous goods shipping fees.

Program Information

- CBT - Two 2.5-mL cord blood specimens; designed for assays required for the production of umbilical cord blood stem cell programs
- SCP - Two 3.0-mL peripheral blood specimens; designed for laboratories that process and assess the suitability of stem cells
- Two shipments per year

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Bacterial Detection in Platelets BDP, BDP5

Procedure	Program Code		Challenges per Shipment
	BDP	BDP5	
Bacterial culture and detection systems	▮		2
Bacterial culture and detection systems		▮	5

Program Information

- BDP - Two lyophilized pellet specimens with diluents; two shipments per year
- BDP5 - Five lyophilized pellet specimens with diluents; three shipments per year

Additional Information

- The Centers for Medicare & Medicaid Services (CMS) requires proficiency testing for bacterial detection/identification. Please select the appropriate program for your laboratory based on the information below.
- Survey BDP is designed for donor centers/laboratories that are associated with a CMS-certified microbiology laboratory with the same CLIA number and are participating in an approved proficiency testing program for bacterial detection.
- Survey BDP5 is designed for donor centers/laboratories that are performing bacterial detection for the purposes of platelet unit screening and are not associated with a CMS-certified microbiology laboratory with the same CLIA number.
- See International Shipping information section in the Ordering Information Supplement regarding additional dangerous goods shipping fees.

Bacterial Detection in Platelets, Rapid BDPV, BDPV5

Procedure	Challenges per Shipment	
	Program Code	
	BDPV	BDPV5
CMS certified rapid immunoassay	2	5

Program Information

- BDPV - Two frozen specimens; two shipments per year
- BDPV5 - Five frozen specimens; three shipments per year
- For use with methods such as Verax Biomedical

Additional Information

- The Centers for Medicare & Medicaid Services (CMS) requires proficiency testing for bacterial detection in platelets.
- Survey BDPV is designed for donor centers/laboratories that are associated with a CMS-certified microbiology laboratory with the same CLIA number and are participating in an approved proficiency testing program for bacterial detection.
- Survey BDPV5 is designed for donor centers/laboratories that are performing bacterial detection for the purposes of platelet unit screening and are not associated with a CMS-certified microbiology laboratory with the same CLIA number.
- See International Shipping information section in the Ordering Information Supplement regarding additional dangerous goods shipping fees.

Refer to the Ordering Information provided for information regarding additional dangerous goods and related fees.

Expanded Transfusion Medicine Exercises ETME1

Procedure	Program Code	Challenges per Shipment
	ETME1	
Expanded challenges	▮	2

Program Information

- One paper challenge and one wet challenge consisting of a serum specimen(s) and/or red blood cell suspensions
- Two shipments per year

Additional Information

Survey ETME1 is an educational opportunity that offers:

- More challenging and/or complex antibody identification
- Comprehensive case studies in transfusion medicine
- Simulated collaboration with other professionals, including those within or outside your institution
- A method for determining the laboratory's ability to recognize and integrate problem solving skills in transfusion medicine

The wet challenge may consist of specimens for ABO grouping, Rh typing, antibody detection, antibody identification, compatibility testing, antigen typing, direct antiglobulin testing, antibody titer, and/or antibody elution.

Make critical transfusion decisions with confidence

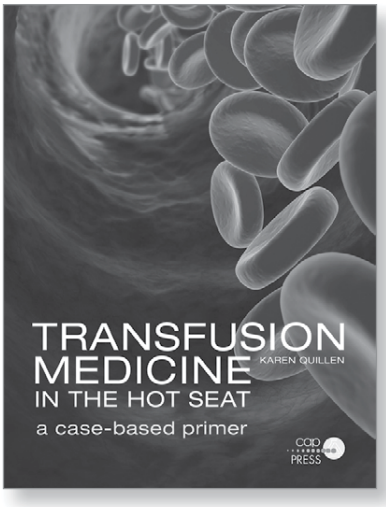
Transfusion Medicine in the Hot Seat is a valuable educational resource for pathology trainees and pathologists practicing transfusion medicine. The text presents a total of 26 realistic transfusion scenarios divided into three sections:

- Antibodies
- Blood Components
- Complications

The short-case format makes the information easily accessible and can serve as the basis for a transfusion medicine curriculum in clinical pathology.

Select Transfusion Medicine in the Hot Seat (PUB224) on your Surveys order form. Or, view sample pages and order online:

- printed books at estore.cap.org
- ebooks at ebooks.cap.org



Item number: PUB224
Softcover; 123 pages

Viral Markers

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Viral Markers—Series 1 VM1

Analyte	Program Code	Challenges per Shipment
	VM1	
Anti-HAV (total: IgM and IgG)	▮	5
Anti-HAV (IgG)	▮	5
Anti-HBc (total: IgM and IgG)	▮	5
Anti-HBs	▮	5
Anti-HBs, quantitative	▮	5
Anti-HCV	▮	5
Anti-HIV-1	▮	5
Anti-HIV-1/2	▮	5
Anti-HIV-2	▮	5
HBsAg	▮	5

Do not use Survey VM1 with rapid anti-HCV, anti-HIV-1, or anti-HIV-1/2 kits. See page 229 for Surveys appropriate for rapid methods.

Program Information
- Five 3.5-mL plasma specimens
- Three shipments per year

Viral Markers—Series 2 VM2

Analyte	Program Code	Challenges per Shipment
	VM2	
Anti-HBe	▮	5
HBeAg	▮	5

Program Information
- Five 3.5-mL plasma specimens
- Three shipments per year

Viral Markers—Series 3 VM3

Analyte	Program Code	Challenges per Shipment
	VM3	
Anti-CMV	▮	3
Anti-HTLV-I/II	▮	3
HIV-1 p24 antigen	▮	3

Program Information
- Three 3.5-mL plasma specimens
- Two shipments per year

Viral Markers—Series 4 VM4

Analyte	Program Code	Challenges per Shipment
	VM4	
Anti-*Trypanosoma cruzi* (Chagas disease)	▮	2

Program Information
- Two 1.0-mL plasma specimens
- Two shipments per year

Viral Markers—Series 5 VM5

Analyte	Program Code	Challenges per Shipment
	VM5	
Anti-HAV (IgM)	▮	5
Anti-HBc (IgM)	▮	5

Program Information
- Five 1.5-mL plasma specimens
- Three shipments per year

Viral Markers—Series 6 VM6, VM6X

Analyte	Program Code		Challenges per Shipment
	VM6	VM6X NEW	
Anti-HIV-1/2	▮	▮	5
HIV-1 p24 antigen	▮	▮	5

Program Information
- VM6 - Five 0.5-mL plasma specimens
- VM6X - All Survey VM6 specimens in duplicate
- For use with methods such as the Abbott ARCHITECT HIV Combo, Bio-Rad GS HIV Combo, and Alere Determine HIV Combo assays
- Three shipments per year

Anti-HIV 1/2 AHIV, AHIVW

Analyte/Procedure	Program Code		Challenges per Shipment
	AHIV	AHIVW	
Anti-HIV-1, Anti-HIV-2, Anti-HIV-1/2	▮		5
Anti-HIV-1, Anti-HIV-1/2, waived methods only		▮	2

Program Information
- AHIV - Five 0.5-mL plasma specimens; three shipments per year
- AHIVW - Two 0.5-mL plasma specimens; two shipments per year

Anti-HCV, Rapid Methods, Waived RHCVW

Analyte/Procedure	Program Code	Challenges per Shipment
	RHCVW	
Anti-HCV, waived methods only	▮	3

Program Information
- Three 0.5-mL plasma specimens
- Two shipments per year

Nucleic Acid Testing NAT

Analyte	Program Code	Challenges per Shipment
	NAT	
HBV	▮	5
HCV	▮	5
HIV	▮	5
West Nile virus	▮	5

Program Information

- Five 6.0-mL plasma specimens
- Designed for blood donor centers performing nucleic acid testing on donor units
- Compatible with HIV, HCV, and HBV multiplex assays
- Three shipments per year

Vector-Borne Disease—Molecular VBDM

Analyte	Program Code	Challenges per Shipment
	VBDM	
Zika virus	▮	3

Program Information

- Three 1.5-mL liquid specimens
- Two shipments per year

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Parentage Testing

Parentage/Relationship Test—Filter Paper PARF		
Analyte/Procedure	**Program Code**	**Challenges per Shipment**
	PARF	
Calculation challenge (paper challenge)	▮	1
DNA testing (PCR)	▮	4

Program Information

- Three blood-stained filter paper paternity trio specimens; two buccal swabs for a second alleged-father challenge
- Reporting for short tandem repeats (STRs), XSTRs, Y-STRs, as well as the conclusions provided
- Three shipments per year

We are here to help. Fast Focus on Compliance—the inspector's quick guide

A resource for laboratories and inspectors alike, our Fast Focus on Compliance mini-training vignettes help you prepare for future laboratory inspections by gaining a clear understanding of the requirements and receiving insight into areas that need improvement:

- Inspecting Method Validation/Verification Studies
- Inspecting Personnel Records
- 12 Inspector Tools to Make Your Inspection Go More Smoothly
- Proficiency Testing Referral and Communications
- Competency Assessment
- Documenting Your Inspection Findings

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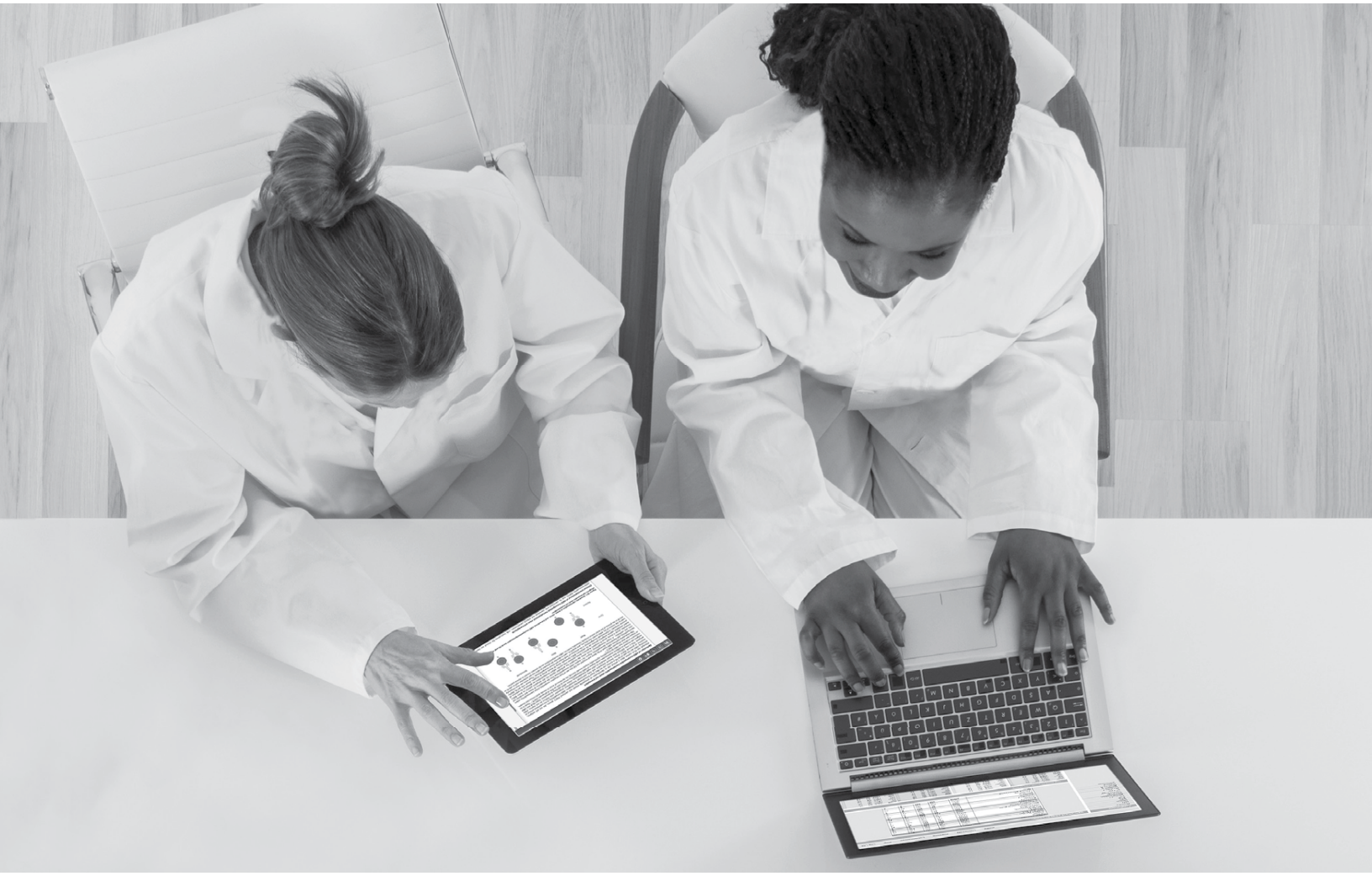

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18 Histocompatibility

We live our mission of quality.

- More than 8,000 CAP-accredited laboratories
- More than 4,000 CAP inspections annually
- More than 22,400 laboratory sites using CAP proficiency testing

Histocompatibility

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

HLA Crossmatching, Antibody Screen, and Antibody Identification (Class I) MX1B, MX1C, MX1E

Procedure	Program Code			Challenges per Shipment
	MX1B	MX1C	MX1E	
Crossmatching	▮	▮		6
Antibody screen	▮	▮	▮	3
Antibody identification	▮	▮	▮	3

Additional Information

Blood donor screening is now a reporting option for antibody screening results. This change covers the use of HLA testing in blood centers/hospital laboratories for the purpose of donor qualification.

Program Information

- MX1B - Three 0.25-mL plasma specimens; two (approximately 1.0 x 10^6 cells) purified peripheral blood lymphocyte specimens
- MX1C - Three 0.50-mL plasma specimens; two (approximately 4.0 x 10^6 cells) purified peripheral blood lymphocyte specimens
- MX1E - Three 0.30-mL plasma specimens; must be ordered in conjunction with Survey MX1B or MX1C
- Three shipments per year

HLA Crossmatching, Antibody Screen, and Antibody Identification (Class II) MX2B, MX2C, MX2E

Procedure	Program Code			Challenges per Shipment
	MX2B	MX2C	MX2E	
Crossmatching	▮	▮		6
Antibody screen	▮	▮	▮	3
Antibody identification	▮	▮	▮	3

Additional Information

Blood donor screening is now a reporting option for antibody screening results. This change covers the use of HLA testing in blood centers/hospital laboratories for the purpose of donor qualification.

Program Information

- MX2B - Three 0.25-mL plasma specimens; two (approximately 7.2 x 10^6 cells) purified peripheral blood lymphocyte specimens
- MX2C - Three 0.50-mL plasma specimens; two (approximately 9.6 x 10^6 cells) purified peripheral blood lymphocyte specimens
- MX2E - Three 0.30-mL plasma specimens; must be ordered in conjunction with Survey MX2B or MX2C
- Three shipments per year

For laboratories conducting BOTH Class I and Class II HLA testing, see next page.

HLA Crossmatching, Antibody Screen, and Antibody Identification (Class I/II) Combinations MXB, MXC

Procedure	Corresponding Survey	Program Code	
		MXB	MXC
Crossmatching, antibody screen, and antibody identification (Class I)	MX1B*	▮	
Crossmatching, antibody screen, and antibody identification (Class II)	MX2B*	▮	
Crossmatching, antibody screen, and antibody identification (Class I)	MX1C*		▮
Crossmatching, antibody screen, and antibody identification (Class II)	MX2C*		▮

*See page 234 for specimen and analyte information.

Program Information

- MXB - Class I: three 0.25-mL plasma specimens, three purified peripheral blood lymphocyte specimens; Class II: three 0.25-mL plasma specimens, three purified peripheral blood lymphocyte specimens
- MXC - Class I: three 0.50-mL plasma specimens, three purified peripheral blood lymphocyte specimens; Class II: three 0.50-mL plasma specimens, three purified peripheral blood lymphocyte specimens
- Three shipments per year

Class I & II HLA Molecular Typing DML

Procedure	Program Code	Challenges per Shipment
	DML	
Molecular HLA-A, -B, and -C typing (Class I)	▮	5
Molecular HLA-DR, -DQ, and -DP typing (Class II)	▮	5

Program Information

- Ten approximately 1.0-mL whole blood specimens in CPD-A
- Serologic equivalents and MICA reporting available
- Three shipments per year

HLA-B27 Typing B27

Procedure	Program Code	Challenges per Shipment
	B27	
HLA-B27 typing	▮	5

Program Information

- Five 2.0-mL whole blood specimens in CPD-A
- Two shipments per year

Antibody Titer ABT, ABT1, ABT2, ABT3

Procedure	Program Code				Challenges per Shipment
	ABT	ABT1	ABT2	ABT3	
Anti-A titer	▮	▮			1
Anti-B titer				▮	1
Anti-D titer	▮		▮		1

Program Information

- ABT - One 2.0-mL plasma specimen for anti-A titer with one corresponding titer cell (3%–4% red blood cell suspension); one 2.0-mL plasma specimen for anti-D titer with one corresponding titer cell (3%–4% red blood cell suspension)
- ABT1- One 2.0-mL plasma specimen for anti-A titer with one corresponding titer cell (3%–4% red blood cell suspension)
- ABT2 - One 2.0-mL plasma specimen for anti-D titer with one corresponding titer cell (3%–4% red blood cell suspension)
- ABT3 - One 2.0-mL plasma specimen for anti-B titer with one corresponding titer cell (3%–4% red blood cell suspension)
- Two shipments per year

Monitoring Engraftment ME

Procedure	Program Code	Challenges per Shipment
	ME	
Stem cell monitoring engraftment	▮	3

Program Information

- Five 1.0-mL whole blood specimens
- Designed for laboratories supporting stem cell transplant and laboratories monitoring chimerism after organ transplantation
- Three shipments per year

HLA Disease Association-Drug Risk DADR1, DADR2

Analyte	Program Code		Challenges per Shipment
	DADR1	DADR2	
HLA-A*31:01	▮		3
HLA-B*13:01	▮		3
HLA-B*15:02	▮		3
HLA-B*57:01	▮		3
HLA-B*58:01	▮		3
HLA-A*29:01		▮	3
HLA-A*29:02		▮	3
HLA-DQA1*04:01		▮	3
HLA-DQA1*05:01		▮	3
HLA-DQB1*03:02		▮	3
HLA-DQB1*06:02		▮	3
HLA-DRB1*03:01		▮	3
HLA-DRB1*03:02		▮	3
HLA-DRB1*04:02		▮	3
HLA-DRB1*04:03		▮	3
HLA-DRB1*04:06		▮	3
HLA-DRB1*08:02		▮	3
HLA-DRB1*08:04		▮	3
HLA-DRB1*14:04		▮	3
HLA-DRB1*14:05		▮	3
HLA-DRB1*14:08		▮	3
HLA-DRB1*15:01		▮	3
HLA-DRB1*15:02		▮	3
DQA1*02		▮	3
DQA1*03		▮	3
DQA1*05		▮	3
DQB1*02:01		▮	3
DQB1*02:02		▮	3

Program Information

- Three 0.1-mL specimens, each containing 200 µg/mL of human DNA in media
- Two shipments per year

Additional Information

These Surveys will challenge the laboratory to accurately identify the presence or absence of alleles associated with a variety of disease states (listed below) and/or the adverse reactions to specific drugs.

DADR1

- Carbamezepine induced Stevens-Johnson syndrome (CSJ)
- Allopurinol Stevens-Johnson syndrome (ASJ)
- Hypersensitivity to abacavir (HA)
- Dapsone hypersensitivity (DH)

DADR2

- Celiac disease (CD)
- Narcolepsy (N)
- Pemphigus vulgaris (PV)
- Psoriasis (P)
- Antiglomerular basement membrane disease (ABM)
- Birdshot retinochoroidopathy (BR)
- Idiopathic myopathy (IM)

Atlas of Transplant Pathology (PUB124)

This atlas serves as a handy resource for practical interpretation of solid organ transplant biopsies and other specimens by general pathologists as well as subspecialists.

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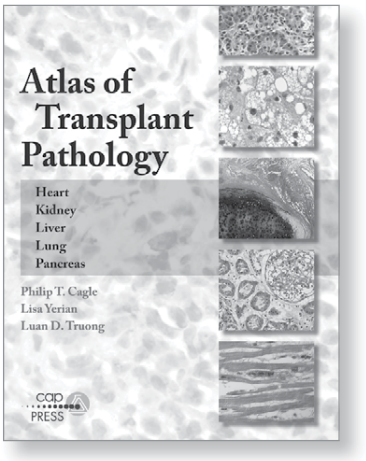

Item number: PUB124
254 pages; 2015

19 Genetics and Molecular Pathology

Gain more value from your accreditation program.

CAP accreditation is more than "something to check off your list." It is an opportunity to help keep your laboratory operating at peak performance.

- The CAP offers educational material and support, including highly-trained medical technologists who are available to answer questions.
- The peer inspection model helps participants develop meaningful connections, learn from each other, and share best practices.

Genetics and Molecular Pathology

New Programs NEW

Cytogenetics

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

CAP/ACMG Cytogenetics CY, CYBK

Analyte/Procedure	Program Code		Challenges per Shipment
	CY	CYBK	
Chromosome abnormality	▮	▮	6
Karyotype nomenclature	▮	▮	6
Educational challenge, ungraded	▮	▮	1 per year

Additional Information

Each challenge includes a case history and images of metaphase cells that are representative of each case. Each mailing will include three constitutional and three neoplastic challenges.

Program Information

- CY - Online images of metaphase cells; delivered two times a year; your CAP shipping contact will be notified via email when the activity is available
- CYBK - Prints of metaphase cells; two shipments per year

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CE credit

CAP/ACMG Fluorescence In Situ Hybridization CYF, CYI

Disease/Procedure	Program Code		Challenges per Shipment	
	CYF	CYI	A	B
Constitutional and Hematologic Disorders				
FISH for constitutional disorder - slides	▮		1	1
FISH for constitutional disorder - paper/photograph challenge	▮		2	2
FISH for hematologic disorder - slides	▮		1	1
FISH for hematologic disorder - paper/photograph challenge	▮		2	2
Urothelial Carcinoma				
FISH for urothelial carcinoma		▮	2	2

Additional Information

- CYF 2019-A:
  Constitutional disorder - Prenatal aneuploidy probes (two slides)
  Constitutional disorder - (two paper/photograph challenges)
  Hematologic disorder - 20q deletion (two slides)
  Hematologic disorder - (two paper/photograph challenges)
- CYF 2019-B:
  Constitutional disorder - *SRY* (two slides)
  Constitutional disorder - (two paper/photograph challenges)
  Hematologic disorder - 7q deletion (two slides)
  Hematologic disorder - (two paper/photograph challenges)
- CYF is prepared from cell suspension samples. For FISH in paraffin-embedded tissues, see page 241.

Program Information

- CYF - Four slides and four paper/photograph challenges
- CYI - Two 250-µL cell samples suspended in ethanol from two different specimens; participants use FISH to detect chromosome abnormalities
- Two shipments per year

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CAP/ACMG Fluorescence In Situ Hybridization for Paraffin-Embedded Tissue CYH, CYJ, CYK, CYL

Analyte/Procedure	Program Code				Challenges per Shipment	
	CYH	CYJ	CYK	CYL	A	B
Breast Cancer						
HER2 gene amplification	▮				10	10
Brain/Glioma Tissue						
1p/19q		▮			1	1
Solid Tumor						
MDM2 gene amplification			▮		1	
ROS1 gene rearrangement			▮			1
Lymphoma Tissue						
MYC gene rearrangement				▮	1	
BCL6 gene rearrangement				▮		1

Program Information

- CYH - Two unstained, five-core tissue microarray slides equivalent to 10 paraffin-embedded breast tissue specimens; two H&E stained tissue microarray slides will also be provided
- CYJ - Four unstained slides; one H&E stained slide
- CYK, CYL - Two unstained slides; one H&E stained slide
- All CYJ, CYK, CYL specimens will be 4.0-micron tissue sections mounted on positively charged glass slides
- Two shipments per year

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CAP/ACMG Constitutional Microarray CYCGH

Procedure	Program Code	Challenges per Shipment
	CYCGH	
Cytogenomic microarray analysis for constitutional abnormality	▮	2
Educational paper/photograph challenge for constitutional abnormality	▮	1

Program Information

- Two 3.0-µg DNA specimens; one paper/photograph challenge
- Two shipments per year

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Additional Information

Participants will identify and characterize gains or losses and the cytogenetic location of abnormalities detected.

This Survey is not appropriate for low resolution arrays that are designed to detect only aneuploidy.

CAP/ACMG Oncology Microarray CYCMA

Procedure	Program Code	Challenges per Shipment
	CYCMA	
Cytogenomic microarray analysis for oncologic abnormality	▮	1
Educational paper/photograph challenge for oncologic abnormality	▮	1

Program Information

- One 3.0-ug DNA specimen; one paper/photograph challenge
- Two shipments per year

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Additional Information

Participants will identify and characterize gains or losses and the cytogenetic location of abnormalities detected.

Biochemical and Molecular Genetics

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

CAP/ACMG Biochemical Genetics BGL, BGL1

Analyte/Procedure	Program Code		Challenges per Shipment
	BGL	BGL1	
Acylcarnitines, qualitative and quantitative	▮		1
Amino acids, qualitative and quantitative	▮		1
Carnitine, qualitative and quantitative		▮	3
Glycosaminoglycans (mucopolysaccharides), qualitative and quantitative	▮		1
Organic acids, qualitative and quantitative	▮		1
Educational challenge	▮		1

Program Information

- BGL -
  Acylcarnitines: One 0.1-mL plasma specimen

  Amino acids: One 1.0-mL plasma or 2.0-mL urine specimen

  Glycosaminoglycans (mucopolysaccharides): One 2.0-mL urine specimen

  Organic acids: One 7.5-mL urine specimen

  Educational challenge: Will consist of any one of the BGL analytes
- BGL1 - Three 0.3-mL serum specimens
- Two shipments per year

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CAP/ACMG Alpha-1 Antitrypsin Genotyping AAT

Analyte/Procedure	Program Code	Challenges per Shipment
	AAT	
Alpha-1 antitrypsin (*SERPINA1*) genotyping	▮	3

This Survey will test for the M, S, and Z alleles.

Program Information

- Three 10.0-µg extracted DNA specimens
- Two shipments per year

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CAP/ACMG Apolipoprotein E Genotyping APOE

Analyte/Procedure	Program Code	Challenges per Shipment
	APOE	
Apolipoprotein E (*APOE*) genotyping	▮	3

This Survey is designed for laboratories utilizing *APOE* testing for hyperlipoproteinemia type III and Alzheimer diseases and will test for *APOE* e2, *APOE* e3, and *APOE* e4.

Program Information

- Three 10.0-µg extracted DNA specimens
- Two shipments per year

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CAP/ACMG *BRCA1/2* Sequencing BRCA

Analyte/Procedure	Program Code	Challenges per Shipment
	BRCA	
BRCA1/2 DNA sequencing and variant interpretation	▮	3
BRCA1/2 duplication/deletion analysis	▮	3

Additional Information

- Test your skill at reporting and interpreting DNA sequence variants for *BRCA1/2* using standard nomenclature.
- Receive a summary and discussion of responses, including comments on the variant nomenclature and known or expected outcomes from identified variants.
- Primers are not included; laboratories are expected to utilize the primers used in routine clinical testing.

Program Information

- Three 10.0-µg extracted DNA specimens
- Two shipments per year

ACMG American College of Medical Genetics and Genomics

NEW

CAP/ACMG Cardiomyopathy Sequencing Panel CMSP

Analyte/Procedure	Program Code	Challenges per Shipment
	CMSP	
Cardiomyopathy sequencing panel	▮	3

Additional Information

- This proficiency challenge is for laboratories performing gene panels, exome sequencing, and whole genome sequencing to detect germline variants associated with inherited forms of cardiomyopathy.
- Participants will be asked to identify variants in the following genes: *MYBPC3*, *MYH7*, *TNNI3*, *TNNT2*, and *TPM1*.

Program Information

- Three 80.0-µL purified extracted DNA specimens (50 ng/µL)
- Two shipments per year

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CAP/ACMG Hemoglobinopathies Genotyping HGM

Analyte/Procedure	Program Code	Challenges per Shipment
	HGM	
Alpha-thalassemia	▮	3
Beta-thalassemia	▮	3
Hemoglobin S/C	▮	3

Program Information

- Three 50.0-µg extracted DNA specimens
- Two shipments per year

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CAP/ACMG Inherited Cancer Sequencing Panel ICSP

NEW

Analyte/Procedure	Program Code	Challenges per Shipment
	ICSP	
Inherited cancer sequencing panel	▮	3

Program Information

- Three 80.0-µL purified extracted DNA specimens (50 ng/µL)
- Two shipments per year

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Additional Information

- This proficiency challenge is for laboratories performing gene panels, exome sequencing, and whole genome sequencing to detect germline variants associated with inherited forms of cancer.
- Participants will be asked to identify variants in the following genes: *BRCA1*, *BRCA2*, *CDKN2A*, *MLH1*, *MSH2*, *MSH6*, and *PMS2*.

Bone Marrow Benchtop Reference Guide

NEW

Bone Marrow Benchtop Reference Guide is an illustrated guide to common and rare cells. With more than 60 different identifications and a detailed description for each cell morphology, it's an affordable, convenient way to identify various cell types quickly and confidently. Its rugged construction is well suited for heavy use at the workbench.

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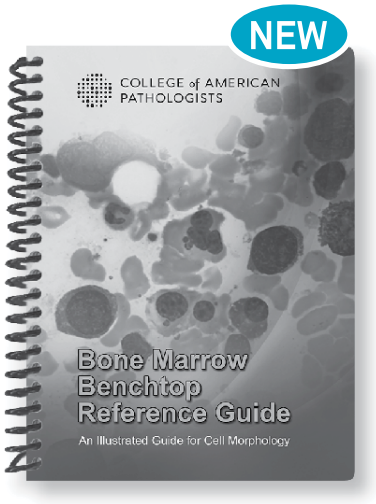

Item number: BMBRG
Spiral bound; 2018

CAP/ACMG Molecular Genetics MGL1, MGL2, MGL3, MGL4, MGL5

Disease/Gene	Program Code					Challenges per Shipment
	MGL1	MGL2	MGL3	MGL4	MGL5	
Bloom syndrome				▮		3
BRCA1/2			▮			3
Canavan				▮		3
Connexin 26			▮			3
Cystic fibrosis		▮			▮	3/2(MGL5)
DMD/Becker		▮				3
Factor V Leiden	▮					3
Familial dysautonomia				▮		3
Fanconi anemia complementation group C				▮		3
Fragile X	▮					3
Friedreich ataxia		▮				3
Gaucher				▮		3
Glycogen storage disease type IA				▮		3
Hemochromatosis	▮					3
Hemoglobin S/C		▮				3
Huntington		▮				3
Methylene tetrahydrofolate reductase (MTHFR) c.665C>T (677C>T) and c.1286A>C (1298A>C)	▮					3
Mucolipidosis IV				▮		3
Multiple endocrine neoplasia type 2 (MEN2)			▮			3
Myotonic dystrophy		▮				3
Niemann-Pick type A/B				▮		3
Plasminogen activator inhibitor (PAI)-1	▮					3
Prader-Willi/Angelman syndrome	▮					3

Continued on the next page

Program Information

- MGL1, MGL2, MGL3, MGL4 - Three 50.0-µg extracted DNA specimens
- MGL5 - Two 50.0-µg extracted DNA specimens
- Two shipments per year

ACMG American College of Medical Genetics and Genomics

Additional Information

- The *BRCA1/2* program (module MGL3) is designed for laboratories testing for the three Ashkenazi Jewish founder mutations.
- The cystic fibrosis programs (modules MGL2 and MGL5) are designed for laboratories that are testing for the minimum mutation panel for population-based carrier screening (ie, the ACMG-23 mutation panel) from the ACMG Technical Standards and Guidelines for *CFTR* Mutation Testing, expanded panels, PolyT variant analysis, and/or full gene sequencing.
- Module MGL4 is designed for laboratories testing for diseases/disorders related to Ashkenazi Jewish ancestry.
- The Prader-Willi/Angelman syndrome program is designed for laboratories using methylation techniques for analysis.

CAP/ACMG Molecular Genetics MGL1, MGL2, MGL3, MGL4, MGL5 continued

Disease/Gene	Program Code					Challenges per Shipment
	MGL1	MGL2	MGL3	MGL4	MGL5	
Prothrombin	▮					3
RhD		▮				3
Spinal muscular atrophy		▮				3
Spinocerebellar ataxia		▮				3
Tay-Sachs				▮		3

Additional Information

- The *BRCA1/2* program (module MGL3) is designed for laboratories testing for the three Ashkenazi Jewish founder mutations.
- The cystic fibrosis programs (modules MGL2 and MGL5) are designed for laboratories that are testing for the minimum mutation panel for population-based carrier screening (ie, the ACMG-23 mutation panel) from the ACMG Technical Standards and Guidelines for *CFTR* Mutation Testing, expanded panels, PolyT variant analysis, and/or full gene sequencing.
- Module MGL4 is designed for laboratories testing for diseases/disorders related to Ashkenazi Jewish ancestry.
- The Prader-Willi/Angelman syndrome program is designed for laboratories using methylation techniques for analysis.

Program Information

- MGL1, MGL2, MGL3, MGL4 - Three 50.0-µg extracted DNA specimens
- MGL5 - Two 50.0-µg extracted DNA specimens
- Two shipments per year

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CAP/ACMG Inherited Metabolic Diseases IMD1, IMD2, IMD3

Analyte/Procedure	Program Code			Challenges per Shipment
	IMD1	IMD2	IMD3	
Mitochondrial DNA deletion syndromes	▮			3
MCAD		▮		3
Mitochondrial cytopathies*			▮	3

*Includes disorders/diseases such as Leber hereditary optic neuropathy and myoclonus epilepsy with ragged red fibers (MERRF).

Program Information

- IMD1 - Three 50.0-µL DNA specimens (50.0 ng/µL DNA PCR product that encompasses the entire mitochondrial genome)
- IMD2, IMD3 - Three 50.0-µg extracted DNA specimens
- Two shipments per year

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CAP/ACMG Molecular Genetics Sequencing SEC, SEC1

Procedure	Program Code		Challenges per Shipment
	SEC	SEC1	
DNA sequencing interpretation challenge	▮		3
DNA sequencing		▮	3

Additional Information

- Test your skill at interpreting and reporting DNA sequence variants for inherited diseases using standard nomenclature.
- Receive a summary and discussion of responses, including comments on nomenclature, known or expected outcomes from identified variants, and teaching points about genes/disorders represented.
- Results for both programs (SEC, SEC1) must be submitted online through e-LAB Solutions Suite.

Program Information

- SEC - DNA sequence electropherogram files with a range of variants, suitable for base-calling and analysis using a range of commercial or public domain software programs; also includes nomenclature/variant references. Two online acitivities per year; your CAP shipping contact will be notified via email when the activity is available
- SEC1 - Three 10.0-µg extracted DNA specimens; forward and reverse lyophilized primers are provided. Two shipments per year

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Translating Genes Into Health®

Give the CAP's complimentary Sample Exchange Registry service a try!

Sign up for this unique and complimentary service for those rare analytes for which proficiency testing is not yet available. This service now includes all clinical laboratory disciplines.

- The CAP connects labs performing testing for which no formal proficiency testing is available.
- There is no charge for this service.
- Participate at any time, no contract required.
- A minimum of three labs performing the same analyte test must participate before the CAP can facilitate the sample exchange.
- Each individual laboratory will receive its own results along with an anonymized summary report for all participants.

Register today! Visit cap.org and from the Laboratory Improvement tab, choose Proficiency Testing > Sample Exchange Registry.

Pharmacogenetics PGX, PGX1, PGX2, PGX3

Analyte/Procedure	Program Code				Challenges per Shipment
	PGX	PGX1	PGX2	PGX3	
CYP2C19	▮				3
CYP2C9	▮				3
CYP2D6	▮				3
CYP3A4	▮				3
CYP3A5	▮				3
SLCO1B1 (rs4149056)	▮				3
VKORC1	▮				3
IL28B (rs12979860)		▮			3
*HLA-B*15:02*			▮		3
*HLA-B*57:01*			▮		3
DPYD				▮	3
TPMT				▮	3
UGT1A1				▮	3

Program Information

- Three 25.0-µg extracted DNA specimens
- Includes allele detection (genotyping) and/or interpretive challenges
- Two shipments per year

Additional Information

- *UGT1A1* (PGX3 Survey) tests the laboratory's ability to detect variants in the TATA repeat sequence in the *UGT1A1* promotor (eg, *UGT1A1*28* with seven TA repeats). The ability to detect variants in other regions of the *UGT1A1* gene is not part of this program.
- Survey PGX2 is designed for laboratories that provide *HLA-B*57:01* testing to identify risk of hypersensitivity to abacavir and *HLA-B*15:02* testing to identify risk of hypersensitivity to carbamazepine. The intended response is qualitative (presence/absence of the allele). This Survey is not appropriate for laboratories that perform molecular HLA typing. For HLA typing proficiency testing, please consult the HLA Molecular Typing (DML) Survey.

CAP/ACMG Rett Syndrome (*MECP2*) RETT

Analyte/Procedure	Program Code	Challenges per Shipment
	RETT	
MECP2 genotyping	▮	3
MECP2 duplication/deletion analysis	▮	3

Program Information

- Three 10.0-µg extracted DNA specimens
- Two shipments per year

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CAP/ACMG Thrombophilia Mutations TPM

Analyte/Procedure	Program Code	Challenges per Shipment
	TPM	
Factor II	▮	3
Factor V	▮	3

Additional Information

This Survey is designed for the Cepheid GeneXpert factor II and factor V assays. DNA extraction for other assays/methods is NOT recommended.

Program Information

- Three 250.0-µL synthetic whole blood specimens
- Two shipments per year

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Red Blood Cell Antigen Genotyping RAG

Procedure	Program Code	Challenges per Shipment
	RAG	
Red blood cell antigen genotype with predictive phenotype	▮	3

Program Information

- Three 2.0-mL whole blood specimens
- Two shipments per year

Variant Interpretation Only Program VIP/VIP1

Analyte/Procedure	Program Code	Challenges per Shipment
	VIP/VIP1	
Variant interpretation online case review	▮	3

Additional Information

VIP is an educational acitivity for pathologists, PhDs, genetic counselors, technologists, and any other laboratory staff with an interest in germline variant interpretation to assess and improve their diagnostic skills. All cases will comply with the 2015 ACMG standards and guidelines for the interpretation of sequence variants and will include:

- A clinical history with relevant laboratory data
- Results of ancillary studies, where appropriate
- Case discussion and discussion of interpretive criteria
- A variety of germline variants, diseases, and disorders

Program Information

- VIP - Three germline diagnostic challenges; reporting with CME/CE credit is available for one pathologist, MD, PhD, technologist, or genetic counselor
- VIP1 - Reporting option with CME/CE credit for each additional pathologist, MD, PhD, technologist, or genetic counselor (within the same institution); must order in conjunction with Survey VIP
- Earn a maximum of 3 CME credits *(AMA PRA Category 1 Credits™)* per pathologist/MD/PhD and a maximum of 3 CE credits per technologist/genetic counselor for completion of an entire year
- One online educational activity per year; your CAP shipping contact will be notified via email when the activity is available

CME CE credit

Noninvasive Prenatal Testing NIPT		
Analyte	**Program Code**	**Challenges per Shipment**
	NIPT	
Cell-free DNA screening for fetal aneuploidy	▮	3

Noninvasive prenatal testing is an exercise and is not considered proficiency testing. This exercise may be used to meet the requirements for alternative assessment

Program Information

- Three maternal plasma samples
- Two shipments per year

Hematology Benchtop Reference Guide (HBRG)

- More than 50 different cell identifications, including common and rare cells
- Detailed descriptions for each cell morphology
- Six tabbed sections for easy reference
  - Erythrocytes
  - Erythrocyte Inclusions
  - Granulocytic (Myeloid) and Monocytic Cells
  - Lymphocytic Cells
  - Platelets and Megakaryocytic Cells
  - Microorganisms and Artifacts
- A durable and water-resistant format to withstand years of benchtop use—5” x 6½”

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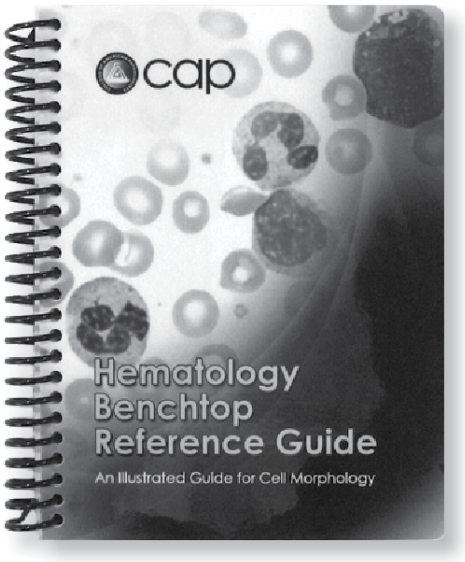


Item number: HBRG
Spiral bound; 60 pages;
50+ images; 2012

Next-Generation Sequencing

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

All laboratories subject to US Clinical Laboratory Improvement Amendments (CLIA) Regulations: Proficiency testing (PT) challenges must NOT be referred to another laboratory for any portion of NGS testing, even if this is how patient testing is routinely performed. For PT challenges, any referral is strictly prohibited by CMS.

Next-Generation Sequencing—Germline NGS

Procedure	Program Code	Challenges per Shipment
	NGS	
Next-generation sequencing	▮	1

Additional Information

Laboratories will have the ability to analyze up to 200 preselected chromosomal positions within various genes; for a full list of genes in this program, please go to cap.org. Under the Laboratory Improvement tab, click on Catalog and Ordering Information. The list is located under the PT Order Supplements header.

Program Information

- One 10.0-µg extracted DNA specimen
- Methods-based challenge for germline variants for laboratories using gene panels, exome, and whole genome sequencing
- Results for this program must be submitted online through e-LAB Solutions Suite
- Two shipments per year

Next-Generation Sequencing—Solid Tumor NGSST

Procedure	Program Code	Challenges per Shipment
	NGSST	
Next-generation sequencing	▮	3

Additional Information

- This is a methods-based proficiency challenge for laboratories performing targeted next-generation sequencing of cancer genes or mutation hotspots in solid tumors. Laboratories will be asked to identify somatic single nucleotide variants and small insertions or deletions in the following genes: *AKT1, ALK, APC, ATM, BRAF, CDH1, CTNNB1, EGFR, ERBB2, FBXW7, FGFR2, GNAQ, GNAS, HRAS, IDH1, KIT, KRAS, MET, NRAS, PDGFRA, PIK3CA, PTEN, SMAD4, SMARCB1, SMO, SRC, STK11, TP53.*
- This Survey includes variants present with a variant allele fraction (VAF) potentially as low as 5%.

Program Information

- Three 1.0-µg DNA (50 ng/µL) specimens
- Two shipments per year

Next-Generation Sequencing—Hematologic Malignancies NGSHM

Procedure	Program Code	Challenges per Shipment
	NGSHM	
Next-generation sequencing	▮	3

Additional Information

- This is a methods-based proficiency challenge for laboratories performing targeted next-generation sequencing of genes or mutation hotspots in hematologic malignancies. Laboratories will be asked to identify somatic single nucleotide variants and small insertions or deletions in the following genes: *ASXL1, ATM, BRAF, CALR, CEBPA, CREBBP, CSF3R, DNMT3A, EZH2, FLT3, IDH1, IDH2, JAK2, KIT, KMT2D, MPL, MYD88, NOTCH1, NPM1, SF3B1, SRSF2, TET2, TP53, U2AF1*.
- This Survey includes variants present with a variant allele fraction (VAF) potentially as low as 5%.

Program Information

- Three 1.0-µg DNA (50 ng/µL) specimens
- Two shipments per year

Next-Generation Sequencing Bioinformatics NGSB1, NGSB2

Procedure	Program Code		Challenges per Shipment
	NGSB1	NGSB2	
Illumina TruSeq Amplicon Cancer Panel	▮		1
Ion Torrent AmpliSeq Cancer Hotspot v2		▮	1

Additional Information

- This in silico bioinformatics program is designed to complement and augment somatic variant wet bench NGS proficiency testing programs by testing a greater diversity of variants at a greater range of variant allele fractions.
- The BAM and/or FASTQ files are platform-specific and may not be compatible with other instruments/software.
- Laboratories will be asked to identify somatic single nucelotide variants and small insertions/deletions/indels in the following genes: *ABL1, AKT1, ALK, APC, ATM, BRAF, CDH1, CDKN2A, CSF1R, CTNNB1, EGFR, ERBB2, ERBB4, FBXW7, FGFR1, FGFR2, FGFR3, GNA11, GNAQ, GNAS, HNF1A, HRAS, IDH1, JAK3, KDR, KIT, KRAS, MET, MLH1, MPL, NOTCH1, NPM1, NRAS, PDGFRA, PIK3CA, PTEN, PTPN11, RB1, RET, SMAD4, SMARCB1, SMO, SRC, STK11, TP53, VHL*.
- This Survey includes variants present with a variant allele fraction (VAF) potentially as low as 5%.

Program Information

- Sequencing files containing somatic variants to be downloaded into your laboratory bioinformatics pipeline for analysis and reporting; file sizes range from 100MB to 1GB
- NGSB1 - FASTQ file format for the Illumina TruSeq Amplicon Cancer Panel
- NGSB2 - BAM and FASTQfile formats for the Ion Torrent AmpliSeq Cancer Hotspot v2 Panel
- Two online activities per year; your CAP shipping contact will be notified via email when the activity is available

Next-Generation Sequencing Undiagnosed Disorders—Exome NGSE

Analyte/Procedure	Program Code	Challenges per Shipment
	NGSE	
Exome analysis for germline undiagnosed disorders	▮	1

Additional Information/Minimum Requirements

- This in silico based Survey will assess the ability of the laboratory to identify germline variants responsible for a provided clinic phenotype as is encountered in an undiagnosed disease scenario. In addition to analyzing the in silico mutagenized file to identify a genetic diagnosis for the provided clinical scenario, pathogenic or likely pathogenic ACMG secondary findings may also be reported.
- Laboratories must provide an exome sequencing data file that has been generated using one of the following sources: a specimen from the NGS Survey program (see page 252) or from one of the NIST Reference Material cell lines: RM 8398 (NA12878), RM 8391, RM 8392, or RM 8393. Specimens from the NGSST and NGSHM Surveys cannot be used for this program.
- FASTQs or unaligned BAMs must be submitted along with a BED file describing the regions targeted and interrogated by your laboratory. Additionally, >90% of exons targeted and interrogated by your laboratory must have a minimum read coverage of 10X.
- Laboratories can transfer and download files from most modern browsers/ operating systems:
  - Internet Explorer (IE) 11
  - Safari - The two latest, released versions on Mac OS X and iOS
  - Firefox - The two latest, released versions
  - Chrome - The two latest, released versions
  - Windows - 7 (32-bit and 64-bit), 8 (64-bit), and 10 (32-bit and 64-bit)
- Due to the extremely large file sizes, a minimum allowable transfer speed of 20Mbps will be needed to ensure the successful transfer of sequencing files between laboratories and CAP; however, 40 Mbps and higher is strongly recommended. *Note*: Laboratories should check with their technology department for allowable transfer speeds to determine estimated transfer time and browser/ operating system access.
- Laboratories must comply with all of the above requirements to participate in this program. Additional information regarding how and where to provide your laboratory's exome file will be sent closer to the ship date.

Program Information

- One exome sequencing data file, originating from your laboratory and provided to the CAP, for in silico mutagenesis. The mutagenized exome sequencing data file is to be downloaded and analyzed by your bioinformatics pipeline
- The mutagenized exome sequencing file will be accompanied by a clinical history, relevant laboratory data, and results of ancillary studies, where appropriate
- Two online activities per year; your CAP shipping contact will be notified via email when the activity is available

Next-Generation Sequencing Bioinformatics Somatic Validated Materials NGSBV

Analyte/Procedure	Program Code	Challenges per Shipment
	NGSBV	
Somatic in silico mutagenized sequencing file	▮	1

Additional Information/Minimum Requirements

- This in silico program is designed to optimize bioinformatics pipelines, augment validations, and assist with pipeline verification after changes to NGS/bioinformatics processes. This is not traditional proficiency testing and no results will be returned to the CAP; information regarding the variants introduced will be sent along with the mutagenized file.
- Laboratories must provide a gene panel or exome sequencing data file that has been generated using one of the following sources: a specimen from the NGS Survey program (see page 252) or from one of the following NIST Reference Material cell lines: RM 8398 (NA12878), RM 8391, RM 8392, or RM 8393. Specimens from the NGSST and NGSHM Surveys cannot be used for this program.
- FASTQs or unaligned BAMs must be submitted along with a BED file describing the regions targeted and interrogated by your laboratory.
- The mutagenized sequencing file will contain up to 75 somatic variants (depending on the size of the panel/exome provided) at allele fractions from 3% to 99% (higher allele fractions to mimic loss of heterozygosity or homozygosity) and will include:
  - o Single nucleotide variants
  - o Insertions, deletions, delins, and/or duplications ranging from 1-100bp (1-15bp, 15-50bp, 51-100bp)
  - o Copy number variants of single exons, partial or whole genes, and/or partial or whole chromosomes
  - o DNA fusions (if a laboratory indicates that they detect such structural rearrangements, if the rearrangements are specified and submitted in the BED file, and there is appropriate intronic coverage)
  - o Microsatellite instability at mono nucleotide tracts included in the submitted capture design
  - o Simulated artifactual sequence

  All variants will be modeled based on actual somatic mutations from the COSMIC and/or cBIOPORTAL databases.
- Laboratories can transfer and download files from most modern browsers/operating systems:
  - o Internet Explorer (IE) 11
  - o Safari - The two latest, released versions on Mac OS X and iOS
  - o Firefox - The two latest, released versions
  - o Chrome - The two latest, released versions
  - o Windows - 7 (32-bit and 64-bit), 8 (64-bit), and 10 (32-bit and 64-bit)
- Due to the extremely large file sizes, a minimum allowable transfer speed of 20Mbps will be needed to ensure the successful transfer of sequencing files between laboratories and CAP; however, 40 Mbps and higher is strongly recommended. *Note*: Laboratories should check with their technology department for allowable transfer speeds to determine estimated transfer time and browser/operating system access.
- Laboratories must comply with all of the above requirements to participate in this program. Additional information regarding how and where to provide your laboratory's sequencing file will be sent closer to the ship date.

Program Information

- One panel or exome sequencing data file, originating from your laboratory and provided to the CAP, for in silico mutagenesis
- The mutagenized panel or exome sequencing data file is to be downloaded and analyzed by your laboratory bioinformatics pipeline and compared with the variant information provided by CAP
- Two online activities per year; your CAP shipping contact will be notified via email when the activity is available

Molecular Oncology—Solid Tumors

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Microsatellite Instability (HNPCC) MSI

Procedure	Program Code	Challenges per Shipment
	MSI	
Microsatellite instability testing (DNA amplification)	▮	3
MLH1 promoter methylation analysis	▮	1

Laboratories performing DNA mismatch repair assessment by immunohistochemistry methods should see Survey MMR on page 272.

Program Information

- Two 10.0-micron unstained paraffin section slides and one H&E slide; two photograph challenges
- For laboratories performing molecular testing using PCR
- Two shipments per year

IGHV Mutation Analysis IGHV

Analyte/Procedure	Program Code	Challenges per Shipment
	IGHV	
IGHV	▮	3

Additional Information

- Sequence analysis of the clonal immunoglobulin heavy chain V gene (*IGHV*) to determine somatic hypermutation (SHM) status.
- Any sequencing method may be used.
- Report V-gene allele, percent similarity and mutation status (SHM).

Program Information

- Three 20-µg DNA specimens (200 ng/µL)
- Two shipments per year

In Situ Hybridization ISH, ISH2

Analyte/Procedure	Program Code		Challenges per Shipment
	ISH	ISH2	
Epstein-Barr virus (EBV)	▮		4
Human papillomavirus (HPV)	▮		4
Kappa/Lambda (IGK/IGL)	▮		4
HER2 (*ERBB2*) gene amplification (brightfield)		▮	10

Laboratories performing FISH for interphase chromosomal targets in paraffin sections refer to the Cytogenetics Surveys, page 241.

Program Information

- ISH
  - EBV, HPV: Three 4-core tissue microarray slides and one H&E slide (each)
  - Kappa/Lambda: Four 4-core tissue microarray slides and one H&E slide
- ISH2 - Two 5-core tissue microarray slides in duplicate
- Two shipments per year

DNA Extraction & Amplification FFPE MHO5

Procedure	Program Code	Challenges per Shipment
	MHO5	
DNA purification	▮	1

Additional Information

Methods-based proficiency challenge to examine DNA purification from formalin-fixed, paraffin-embedded tissues (FFPET). Laboratories will be able to purify DNA from FFPET sections and amplify control targets using laboratory-provided reagents.

Program Information

- Three 10.0-micron paraffin sections
- Two shipments per year

Neoplastic Cellularity NEO

Procedure	Program Code	Challenges per Shipment
	NEO	
Online assessment of percent neoplastic cellularity	▮	10

Program Information

- Ten Regions of Interests (ROIs) using online, whole slide images
- A method-based preanalytic Survey to assess competency for determining percent neoplastic cellularity
- Powered by DigitalScope® technology
- Individual reporting fields for up to five pathologists are available
- Two online activities per year; your CAP shipping contact will be notified via email when the activity is available

Sarcoma Translocation SARC

Gene	Program Code	Challenges per Shipment
	SARC	
Sarcoma translocation* (RT-PCR)	▮	3

*See translocation listing below.

Laboratories performing FISH for sarcoma translocation refer to the Cytogenetics Surveys, page 241.

Program Information

- Three snap-frozen cell pellets from which approximately 5.0-µg of RNA can be extracted
- Two shipments per year

Sarcoma Translocation Listing

COL1A1/PDGFB, t(17;22)
ETV6-NTRK3, t(12;15)
EWSR1/ATF1, t(12;22)
EWSR1/ERG, t(21;22)
EWSR1/FLI1, t(11;22)
EWSR1/FLI1 or *EWSR1/ERG*
EWSR1/WT1, t(11;22)
FUS/DDIT3, t(12;16)
PAX3/FOXO1, t(2;13)
PAX7/FOXO1, t(1;13)
PAX3/FOXO1 or *PAX7/FOXO1*
SS18/SSX1, t(X;18)
SS18/SSX2, t(X;18)
SS18/SSX1 or *SS18/SSX2*

Cell-free DNA CFDNA

Analyte/Procedure	Program Code	Challenges per Shipment
	CFDNA	
cfDNA	▮	3

Program Information
- Three 125-ng DNA (25 ng/µL) specimens
- Two shipments per year

Additional Information
- DNA fragments stabilized in simulated plasma.
- This is not intended for laboratories that perform circulating tumor cell (CTC) analysis.
- Potential targets included in this Survey are *BRAF* V600E, *EGFR* T790M, *IDH1* R132C, *KRAS* G12C, *KRAS* G12D, and *NRAS* Q61R, all within a range of 0.1 to 1.0%.

Fusion RNA Sequencing RNA

Analyte/Procedure	Program Code	Challenges per Shipment
	RNA	
RNA	▮	3

Program Information
- Three 500-ng RNA (20 ng/µL) specimens
- Two shipments per year

Additional Information
- Total RNA from a cell line engineered to contain desired fusion RNA.
- This is for laboratories using RNAseq to detect gene fusion transcripts.
- This is not intended to replace the current Survey (SARC) for reverse transcription (RT)-PCR based detection (see page 257).
- Potential fusion variants include: *CD74-ROS1, EML4-ALK, ETV6-NTRK3, FGFR3-TACC3, PAX8-PPARG, SLC45A3-BRAF*.

Solid Tumor—Other BRAF, EGFR, KRAS, KIT

Analyte	Program Code				Challenges per Shipment
	BRAF	EGFR	KRAS	KIT	
BRAF	▮				3
EGFR		▮			3
KRAS			▮		3
KIT				▮	3
PDGFRA				▮	3

Program Information
- BRAF, EGFR, KRAS - Paraffin-embedded sections or shavings
- KIT/PDGFRA - Four 10.0-micron unstained paraffin section slides and one H&E slide, for each specimen
- For laboratories performing molecular testing using PCR
- Two shipments per year

Multigene Tumor Panel MTP

Analyte	Program Code	Challenges per Shipment
	MTP	
BRAF	▮	3
EGFR	▮	3
HER2 (ERBB2)	▮	3
KIT	▮	3
KRAS	▮	3
NRAS	▮	3
PDGFRA	▮	3
PIK3CA	▮	3

Program Information

- Three 2.0-µg gDNA (50 ng/µL) specimens for laboratories performing molecular testing on multiple targets
- Two shipments per year

Additional Information

BRAF, *EGFR*, and *KRAS* are required analytes. Laboratories that perform testing for the detection of somatic single nucleotide variants, insertions, and deletions in these genes are required to enroll in either MTP or the respective single gene Surveys. This includes laboratories that perform NGS-based assays, non-NGS-based multiplexed assays, and nonmultiplexed assays (eg, Sanger sequencing). Laboratories that perform NGS-based testing are encouraged to also enroll in NGSST (on page 252), as this proficiency testing program provides challenges with lower variant allele fractions as well as challenges in other genes commonly included in NGS-based panels for the identification of somatic variants in solid tumors.

Glioma GLI

Analyte	Program Code	Challenges per Shipment
	GLI	
MGMT	▮	2
IDH1, *IDH2*	▮	3
10q *(PTEN)* deletion	▮	1

Program Information

- Two 2.0-µg gDNA (50 ng/µL) specimens
- One specimen containing four 10.0-micron unstained paraffin section slides and one H&E slide
- For laboratories performing molecular testing using PCR
- Two shipments per year

Molecular Oncology—Hematologic

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Molecular Hematologic Oncology MHO, MHO1, MHO2, MHO3, MHO5

Procedure/Gene	Program Code			Challenges per Shipment
	MHO, MHO1	MHO2, MHO3	MHO5	
Lymphoid malignancy genotyping				
IGH	▮			3
IGH/BCL2 major	▮			3
IGH/BCL2 minor	▮			3
IGH/CCND1	▮			3
IGK	▮			3
TRB	▮			3
TRG	▮			3
Myeloid malignancy genotyping				
BCR/ABL1 p190		▮		3
BCR/ABL1 p210		▮		3
CALR		▮		3
CBFB/MYH11		▮		3
FLT3 ITD		▮		3
FLT3 TKD		▮		3
JAK2 c.1849G>T(p.V617F)		▮		3
MLL-PTD (*KMT2A*-PTD)		▮		3
NPM1		▮		3
PML/RARA		▮		3
RUNX1/RUNX1T1		▮		3
DNA extraction and amplification from formalin-fixed, paraffin-embedded (FFPE) tissue			▮	1

Program Information

- MHO - One sample vial containing purified DNA (200 µg/mL per vial) for each specimen
- MHO1 - MHO specimens in duplicate for additional DNA testing
- MHO2 - Two sample vials; one with purified DNA containing 200 µg/mL and one with purified RNA containing 400 µg/mL
- MHO3 - MHO2 specimen in duplicate for additional DNA and RNA testing
- MHO5 - Three 10.0-micron paraffin sections; extraction and amplification from FFPE tissue will be assessed by a method-based challenge
- Two shipments per year; ships on dry ice (dry ice does not apply to MHO5 or international shipments)

Minimal Residual Disease MRD, MRD1, MRD2

Analyte	Program Code			Challenges per Shipment
	MRD	MRD1	MRD2	
BCR/ABL1 p190		▮		3
BCR/ABL1 p210	▮			3
PML/RARA			▮	3

Program Information

- Three RNA specimens in sterile water
- For laboratories diagnosing and monitoring leukemia tumor burden by measuring the quantity of *BCR/ABL1* or *PML/RARA* fusion transcripts
- Two shipments per year; ships on dry ice

20 Anatomic Pathology

Realize a better experience with our online anatomic pathology education programs.

Move away from the limitations of glass slides.

- Online Performance Improvement Program in Surgical Pathology (PIPW/PIPW1)
- Hematopathology Online Education (HPATH/HPATH1)
- Digital Slide Program in Fine-Needle Aspiration (FNA/FNA1)
- Touch Imprint/Crush Preparation (TICP/TICP1)

Anatomic Pathology

New Programs NEW

Discontinued Programs

Cancer Staging Improvement Program (PCSP/PCSP1)

Surgical Pathology

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Online Performance Improvement Program in Surgical Pathology PIPW/PIPW1

Program	Program Code	Challenges per Shipment
	PIPW/PIPW1	
Surgical pathology case review	▮	10

Additional Information

PIPW educates pathologists in general surgical pathology.

- Pathologists can assess their diagnostic skills and compare their performance with that of their peers.
- Included PIPW case selections feature:
  - A variety of neoplastic and nonneoplastic lesions
  - Inflammatory and infectious diseases
  - Various sites, encompassing a variety of organ systems
- See system requirements on page 13.

Program Information

- PIPW - Ten diagnostic challenges/whole slide H&E images with clinical history; reporting with CME credit is available for one pathologist; for each additional pathologist, order PIPW1
- PIPW1 - Reporting option with CME credit for each additional pathologist (within the same institution); must order in conjunction with Survey PIPW
- Earn a maximum of 40 CME credits *(AMA PRA Category 1 Credits™)* per pathologist for completion of an entire year
- This activity meets the ABP CC Part IV Practice Performance Assessment requirements
- Powered by DigitalScope® technology
- Four online activities per year; your CAP shipping contact will be notified via email when the activity is available

Performance Improvement Program in Surgical Pathology PIP/PIP1

Program	Program Code	Challenges per Shipment
	PIP/PIP1	
Surgical pathology case review	▮	10

Additional Information

PIP educates pathologists in general surgical pathology. This program:

- Provides a practical approach to continuing education
- Gives pathologists a method to assess their diagnostic skills and compare their performance with that of their peers
- Features PIP case selections that include:
  - A variety of neoplastic and nonneoplastic lesions
  - Inflammatory and infectious diseases
  - Various sites, encompassing a variety of organ systems

Program Information

- PIP - Ten diagnostic challenges/H&E stained glass slides with clinical history; reporting with CME credit is available for one pathologist; for each additional pathologist, order PIP1
- PIP1 - Reporting option with CME credit for each additional pathologist (within the same institution); must order in conjunction with Survey PIP
- Earn a maximum of 40 CME credits *(AMA PRA Category 1 Credits™)* per pathologist for completion of an entire year
- This activity meets the ABP CC Part IV Practice Performance Assessment requirements
- Four shipments per year

CME credit

Test your diagnostic skills as a pathologist with CPIP

Online, hands-on and interactive, the Clinical Pathology Improvement Program (CPIP) enables pathologists to sharpen their diagnostic skills in real time by working through an actual case. Each month, you will receive a new case, including related images and clinical background. As the case unfolds, more information is revealed, just as in the laboratory. Participants who successfully complete the posttest may apply their earned credits to their Continuing Certification (CC), formerly known as Maintenance of Certification (MOC) SAM requirements. Enjoy a full year of CPIP and earn up to 15 CME/SAM credits.

Choose code CPIP/CPIP1 on your Surveys order form.

Virtual Biopsy Program VBP/VBP1

Program	Program Code	Challenges per Shipment
	VBP/VBP1	
Online biopsy case review	▮	5

Additional Information

VBP educates pathologists to assess and improve their diagnostic skills in surgical pathology.

- Cases may include gross, radiographic, or endoscopic images.
- Cases are from selected organ systems and may include a variety of specimen types (eg, core biopsies, endoscopic biopsies, curettings, aspirate smears). Activities with their corresponding topics are:
  - 2019-A Head and Neck Biopsy
  - 2019-B GYN Biopsy
  - 2019-C Lung Biopsy
  - 2019-D Surgical Pathology Biopsy (various sites)
- See system requirements on page 13.

Program Information

- VBP - Five diagnostic challenges/whole slide images with clinical history; reporting with CME/SAM credit is available for one pathologist; for each additional pathologist, order VBP1
- VBP1 - Reporting option with CME/SAM credit for each additional pathologist (within the same institution); must order in conjunction with Survey VBP
- Earn a maximum of 25 CME/SAM credits *(AMA PRA Category 1 Credits™)* per pathologist for completion of an entire year
- This activity meets the ABP CC Part IV Practice Performance Assessment requirements
- Powered by DigitalScope technology
- Four online activities per year; your CAP shipping contact will be notified via email when the activity is available

Digital Slide Program—Dermatopathology DPATH/DPATH1

Program	Program Code	Challenges per Shipment
	DPATH/DPATH1	
Online dermatopathology case review	▮	6

Additional Information

DPATH educates pathologists, dermatopathologists, and dermatologists to assess and improve their diagnostic skills in dermatopathology.

- Cases include static images.
- See system requirements on page 13.

Program Information

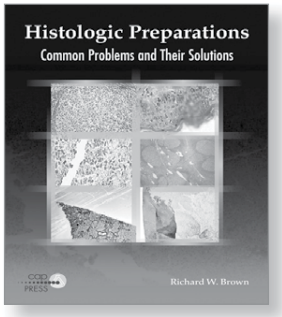
- DPATH - Six diagnostic challenges/whole slide images with clinical history; reporting with CME/SAM credit is available for one pathologist; for each additional pathologist, order DPATH1
- DPATH1 - Reporting option with CME/SAM credit for each additional pathologist (within the same institution); must order in conjunction with Survey DPATH
- Earn a maximum of 15 CME/SAM credits *(AMA PRA Category 1 Credits™)* per pathologist for completion of an entire year
- This activity meets the ABP CC Part IV Practice Performance Assessment requirements
- Powered by DigitalScope technology
- Two online activities per year; your CAP shipping contact will be notified via email when the activity is available

Learn the secret to good slide technique

Histologic Preparations: Common Problems and Their Solutions is a how-to guide to good slide preparation. Building on data and images from the CAP/NSH HistoQIP program, the book presents photographic examples of well-prepared slides followed by numerous examples of associated problems and their solutions. The text contains troubleshooting techniques for the most common artifacts and problems incurred in routine histologic preparations, including fixation and processing; microtomy; frozen sections; hematoxylin-eosin, trichrome, reticulin, elastin, basement membrane, mucin, amyloid, immunohistochemical, and Gram stains; and mycobacteria, *Helicobacter pylori*, sprirochetes, and fungi.

View sample pages and order online:

- printed books at estore.cap.org
- ebooks at ebooks.cap.org



Item number: PUB123
Softcover; 168 pages; 300+ photomicrographs, figures, and tables; 2009

Hematopathology Online Education HPATH/HPATH1

Program	Program Code	Challenges per Shipment
	HPATH/HPATH1	
Hematopathology online case review	▮	5

Additional Information

HPATH educates pathologists, hematolopathologists, and hematologists with an interest in hematopathology to assess and improve their diagnostic skills in hematopathology.

- All cases have been specially selected to highlight important changes in the 2016 revision of the WHO Classification.
- Clinical history and relevant laboratory data.
- At least one online whole slide image of peripheral blood, bone marrow, spleen, lymph node, or other tissue.
- Results of ancillary studies such as immunohistochemistry, flow cytometry, FISH, karyotyping, and molecular studies, where appropriate.
- Case discussion and discussion of differential diagnoses.
- Five SAM questions per case.
- See system requirements on page 13.

Program Information

- HPATH - Five diagnostic challenges/online whole slide images with clinical history; reporting with CME/SAM credit is available for one pathologist/hematologist. For additional pathologist/hematologist, order HPATH1
- HPATH1 - Reporting option with CME/SAM credit for each additional pathologist and hematologist (within the same institution); must order in conjunction with Survey HPATH
- Earn a maximum of 12.5 CME/SAM credits (*AMA PRA Category 1 Credits™*) per pathologist and a maximum of 12.5 CE credits per hematologist for completion of an entire year
- This activity meets the ABP CC Part IV Practice Performance Assessment requirements
- Powered by DigitalScope technology
- Two online activities per year; your CAP shipping contact will be notified via email when the activity is available

Touch Imprint/Crush Preparation TICP/TICP1

Procedure	Program Code	Challenges per Shipment
	TICP/TICP1	
Online slide and image program in rapid assessment case review	▮	4

Additional Information

- The TICP Program is designed to familiarize surgical pathologists, cytopathologists, and cytotechnologists with the cytomorphologic features of pathologic processes and tumors in touch imprints and crush or scrape preparations. These specimens are prepared either for intraoperative consultation (frozen section) or rapid on-site evaluation (ROSE) of tissue biopsies for adequacy and/or interpretation. Participants will learn to make an immediate adequacy assessment, assign the process to a general category, and triage the specimen to appropriate ancillary studies. Participants will review digital whole slides of the TICP preparations (hematoxylin & eosin, modified Wright-Giemsa, and/or Papanicolaou stains), static images of the preparation and ancillary studies, and clinical history/radiographic findings to reach a diagnosis. Each case has a complete description of entities in the differential diagnosis along with a discussion of the correct interpretation.
- Participants will receive immediate feedback on interpretations, ancillary studies, and case-related adequate assessment.
- The cases will be comprised of specimens from the bone and retroperitoneal/liver.
- May include rarely captured cases that may not be available on the glass slide.
- See system requirements on page 13.

Program Information

- TICP - Four online assessment challenges with clinical history; TICP provides CME/SAM/CE credit for one pathologist or cytotechnologist; for each additional pathologist or cytotechnologist, order TICP1
- TICP1 - Reporting option with CME/SAM/CE credit for each additional pathologist/technologist (within the same institution); must order in conjunction with Survey TICP
- Earn a maximum of 10 CME/SAM credits (*AMA PRA Category 1 Credits™*) per pathologist and a maximum of 10 CE credits per cytotechnologist for completion of an entire year
- This activity meets the ABP CC Part IV Practice Performance Assessment requirements
- Online, whole slide images powered by DigitalScope technology
- Two online activities per year; your CAP shipping contact will be notified via email when the activity is available

Experience a new level of pathology education with SAM courses from the CAP

- Outcome-based learning at the cutting edge of pathology science
- Peer reviewed by at least two subject matter experts
- Highly interactive formats with immediate feedback

Visit cap.org and choose the Learning tab, then search *SAM Courses*.

CAP/NSH HistoQIP HQIP

Stain/Tissue	Program Code	Challenges per Shipment	
	HQIP	A	B
H&E - Breast resection	▮	1	
H&E - Uterus resection	▮	1	
IHC - GATA 3 (breast resection)	▮	1	
IHC - ER (uterus resection)	▮	1	
Special Stain - GMS on control material	▮	1	
H&E - Kidney resection	▮		1
H&E - Liver resection	▮		1
IHC - PAX-8 (kidney resection)	▮		1
IHC - HepPar1 (liver resection)	▮		1
Special Stain - Trichrome, liver needle core biopsy	▮		1

Program Information

- Participant laboratories may submit up to five stained coverslipped glass slides (one from each category) per mailing
- Includes photographs and online learning assessment questions
- Two shipments per year

CE credit

Additional Information

HistoQIP improves the preparation of histologic slides in all anatomic pathology laboratories. In this educational program, participants will receive an evaluation specific to their laboratory, an education critique, and a Participant Summary that includes peer comparison data, evaluators' comments, and performance benchmarking data. An expert panel of pathologists, histotechnologists, and histotechnicians will evaluate submitted slides for histologic technique using uniform grading criteria.

NEW

HQIP Whole Slide Image Quality Improvement Program HQWSI

Stain/Tissue	Program Code	Challenges per Shipment	
	HQWSI	A	B
H&E - Breast resection	▮	1	
H&E - Lung resection	▮	1	
H&E - Breast needle core biopsy	▮	1	
H&E - Prostate needle core biopsy	▮	1	
H&E - Colon resection	▮		1
H&E - Kidney resection	▮		1
H&E - Colon biopsy	▮		1
H&E - Skin punch biopsy	▮		1

Program Information

- Participant laboratories may submit up to four stained coverslipped glass slides and upload their scanned whole slide images per mailing
- Two shipments per year

These general immunohistochemistry Surveys assess analytic and postanalytic (interpretive) steps.
For Surveys focusing on preanalytic steps, see the HistoQIP IHC programs on pages 269-270.

CAP/NSH HistoQIP—IHC HQIHC

Stain/Tissue	Program Code	Challenges per Shipment	
	HQIHC	A	B
IHC – CK20 (bladder biopsy)	■	1	
IHC – Progesterone receptor (cervical biopsy)	■	1	
IHC – CD34 (skin, punch biopsy)	■	1	
IHC – CD138 (stomach biopsy)	■	1	
IHC – CD3 (colon biopsy)	■		1
IHC – EMA (endometrium)	■		1
IHC – S100 (skin, excisional biopsy)	■		1
IHC – p504s (prostate biopsy with carcinoma)	■		1

Program Information

- Participants may submit up to four IHC stained and coverslipped glass slides (one from each category) per mailing
- Two shipments per year

Additional Information

HistoQIP – IHC improves the preparation of immunohistochemistry slides in all anatomic laboratories involved in the handling of gastrointestinal, dermatologic, and urological tract biopsies. Participants will receive an evaluation specific to their laboratory and a Participant Summary. An expert panel of pathologists, histotechnologists, and histotechnicians will evaluate submitted slides for histologic technique using uniform grading criteria.

CAP/NSH HistoQIP Mismatch Repair IHC HQMMR

Stain/Tissue	Program Code	Challenges per Shipment	
	HQMMR	A	B
H&E – Colon adenocarcinoma	■	1	
IHC – MLH1 (colon adenocarcinoma)	■	1	
IHC – MSH2 (colon adenocarcinoma)	■	1	
IHC – MSH6 (colon adenocarcinoma)	■	1	
IHC – PMS2 (colon adenocarcinoma)	■	1	
H&E – Endometrial adenocarcinoma	■		1
IHC – MLH1 (endometrial adenocarcinoma)	■		1
IHC – MSH2 (endometrial adenocarcinoma)	■		1
IHC – MSH6 (endometrial adenocarcinoma)	■		1
IHC – PMS2 (endometrial adenocarcinoma)	■		1

Program Information

- Participants may submit up to four IHC and one H&E stained coverslipped glass slides (one from each category) per mailing
- Two shipments per year

Additional Information

This program augments efforts to improve the preparation of H&E and immunohistochemical slides in all anatomic pathology laboratories involved in the handling of colonic and endometrial tumors performing mismatch repair IHC.

CAP/NSH HistoQIP Non-small Cell Lung Carcinoma IHC HQNSC

Stain/Tissue	Program Code	Challenges per Shipment	
	HQNSC	A	B
H&E – Lung adenocarcinoma	■	1	
IHC – TTF-1 (lung adenocarcinoma)	■	1	
IHC – Napsin-A (lung adenocarcinoma)	■	1	
H&E – ALK (positive lung adenocarcinoma)	■	1	
IHC – ALK (positive lung adenocarcinoma)	■	1	
H&E – Lung squamous cell carcinoma	■		1
IHC – p40/p63 (lung squamous cell carcinoma)	■		1
IHC – CK5/6 (lung squamous cell carcinoma)	■		1
H&E – PD-L1 (positive lung squamous cell carcinoma)	■		1
IHC – PD-L1 (positive lung squamous cell carcinoma)	■		1

Program Information

- Participants may submit up to four IHC and one H&E stained coverslipped glass slides (one from each category) per mailing
- Two shipments per year

Additional Information

This program augments efforts to improve the preparation of H&E and immunohistochemical slides in all anatomic pathology laboratories involved in the handling of non-small cell lung carcinoma.

CAP/NSH HistoQIP Biopsy Series HQIPBX

Stain/Tissue	Program Code	Challenges per Shipment	
	HQIPBX	A	B
H&E – Bladder biopsy	■	1	
H&E – Cervical biopsy	■	1	
H&E – Skin punch biopsy	■	1	
H&E – Stomach biopsy	■	1	
H&E – Colon biopsy	■		1
H&E – Endometrial biopsy	■		1
H&E – Prostate needle biopsy	■		1
H&E – Breast core biopsy	■		1

Program Information

- Participants may submit up to four H&E stained and coverslipped glass slides (one from each category) per mailing
- Two shipments per year

Additional Information

The HistoQIP Biopsy Series is an additional program to improve the preparation of histologic slides in all anatomic pathology laboratories. Participants will receive an evaluation specific to their laboratory and a Participant Summary. An expert panel of pathologists, histotechnologists, and histotechnicians will evaluate submitted slides for histologic technique using uniform grading criteria.

CAP/NSH HistoQIP Specialty Series HQBX1, HQBX2, HQBX3, HQBX4

Stain/Tissue	Program Code				Challenges per Shipment	
	HQBX1	HQBX2	HQBX3	HQBX4	A	B
Gastrointestinal Biopsy Module						
H&E – Colon biopsy	▮				1	1
H&E – Esophageal biopsy	▮				1	1
H&E – Small intestinal biopsy	▮				1	1
H&E – Stomach biopsy	▮				1	1
Dermatologic Biopsy Module						
H&E – Alopecia		▮			1	1
H&E – Skin excisional biopsy (large excision)		▮			1	1
H&E – Skin punch biopsy		▮			1	1
H&E – Skin shave biopsy		▮			1	1
Urogenital Tract Biopsy Module						
H&E – Bladder biopsy (nonneoplastic)			▮		1	1
H&E – Bladder biopsy (with carcinoma)			▮		1	1
H&E – Prostate needle biopsy (nonneoplastic)			▮		1	1
H&E – Prostate needle biopsy (with carcinoma)			▮		1	1
Gynecological Biopsy						
H&E – Cervical biopsy				▮	1	1
H&E – Endometrial biopsy				▮	1	1
H&E – Cone/Leep biopsy				▮	1	1
H&E – Vagina biopsy				▮	1	1

Program Information

- HQBX1, HQBX2, HQBX3, HQBX4 - Participants may submit up to four H&E stained and coverslipped glass slides (one from each category) per mailing
- Two shipments per year

Additional Information

The HistoQIP Specialty Series includes modules to improve the preparation of histologic slides in all anatomic pathology laboratories involved in the handling of gastrointestinal, dermatologic, gynecologic, and urogenital tract biopsies. Participants will receive an evaluation specific to their laboratory and a Participant Summary. An expert panel of pathologists, histotechnologists, and histotechnicians will evaluate submitted slides for histologic technique using uniform grading criteria.

General Immunohistochemistry

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Immunohistochemistry MK

Procedure	Program Code	Challenges per Shipment
	MK	
Immunohistochemistry	▮	16

The MK program allows laboratories to compare their assay methodology and results with all participating laboratories.

Program Information

- Seven glass slides with unstained tissue sections from four separate cases; additional slides provided for an H&E stain and negative control
- Two shipments per year

BRAF V600E BRAFV

Procedure	Program Code	Challenges per Shipment
	BRAFV	
BRAF V600E	▮	10

Program Information

- One 10-core tissue microarray slide
- One shipment per year

DNA Mismatch Repair MMR

Procedure	Program Code	Challenges per Shipment
	MMR	
DNA mismatch repair by immunohistochemistry	▮	1

If your laboratory performs DNA mismatch repair by molecular methods, see the MSI program on page 256.

Program Information

- Four 4.0-micron unstained paraffin section slides and one H&E slide for the immunohistochemical analysis of DNA mismatch repair proteins MLH1, MSH2, MSH6, and PMS2
- Two shipments per year

PD-L1 PDL1

Procedure	Program Code	Challenges per Shipment
	PDL1	
PD-L1	▮	10

Program Information

- One 10-core tissue microarray slide; additional slides provided for H&E and PD-L1 control
- One shipment per year

These general immunohistochemistry Surveys assess analytic and postanalytic (interpretive) steps. For Surveys focusing on preanalytic steps, see the HistoQIP IHC programs on pages 269-270.

CD117, CD20 Immunohistochemistry Tissue Microarray PM1, PM3

Analyte	Program Code		Challenges per Shipment
	PM1	PM3	
CD117	▮		10
CD20		▮	10

For ER/PgR testing, see the PM2 program on page 274.

Program Information
- One 10-core tissue microarray slide per predictive marker
- One shipment per year

NEW

CD30 Immunohistochemistry Tissue Microarray CD30

Analyte	Program Code	Challenges per Shipment
	CD30	
CD30	▮	10

Program Information
- One 10-core tissue microarray slide
- Two shipments per year

NEW

p16 Immunohistochemistry Tissue Microarray P16

Analyte	Program Code	Challenges per Shipment
	P16	
p16	▮	10

Program Information
- One 10-core tissue microarray slide
- Two shipments per year

Immunohistochemistry Tissue Microarray Series PM5

Analyte	Program Code	Challenges per Shipment
	PM5	
Glypican-3	▮	10
Myc	▮	10

Program Information
- Two 10-core tissue microarray slides, one for Glypican-3 and one for Myc
- One shipment per year

Additional Information

Each year, the PM5 program will feature two different markers for immunohistochemistry laboratories to evaluate assay performance on a variety of tissue and/or tumor types.

Highly Sensitive Anaplastic Lymphoma Kinase IHC PM6

Procedure	Program Code	Challenges per Shipment
	PM6	
Highly sensitive anaplastic lymphoma kinase IHC (ALK)	▮	10

Program Information
- One 10-core tissue microarray slide
- One shipment per year

Predictive Markers

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

HER2 Immunohistochemistry HER2

Analyte	Program Code	Challenges per Shipment
	HER2	
HER2	▮	20

Program Information

- Two 10-core tissue microarray slides
- Two shipments per year

Additional Information

The HER2 program fulfills the proficiency testing requirement stated in the ASCO/CAP HER2 Testing Guideline. Due to the unique nature of these human, donor-based materials, the shipping date is subject to change. If this should occur, the CAP will provide notification prior to the originally scheduled shipping date.

Gastric HER2 GHER2

Analyte	Program Code	Challenges per Shipment
	GHER2	
HER2	▮	10

Program Information

- One 10-core tissue microarray slide
- Two shipments per year

Additional Information

The interpretive criteria for HER2 immunohistochemistry performed on gastroesophageal adenocarcinomas differs significantly from breast carcinoma. The GHER2 program will help participating laboratories understand these differences.

ER/PgR Immunohistochemistry Tissue Microarray PM2

Analyte	Program Code	Challenges per Shipment
	PM2	
Estrogen receptor (ER)	▮	20
Progesterone receptor (PgR)	▮	20

Program Information

- Four 10-core microarray slides, two for ER and two for PgR
- Two shipments per year

Additional Information

The PM2 program fulfills the proficiency testing requirement stated in the ASCO/CAP ER/PgR Testing Guideline. Due to the unique nature of these human, donor-based materials, the shipping date is subject to change. If this should occur, the CAP will provide notification prior to the originally scheduled shipping date.

Specialty Anatomic Pathology

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Autopsy Pathology AUP/AUP1

Procedure	Program Code	Challenges per Shipment
	AUP/AUP1	
Autopsy online case analysis	▮	5

Each case includes case description, gross and/or microscopic images, and case discussion with sample death certificate, key teaching points, and current references.

Program Information

- AUP - Online activity providing five cases; reporting with CME/SAM credit is available for one pathologist; for each additional pathologist, order AUP1
- Includes the option to download program content
- AUP1 - Reporting option with CME/SAM credit for each additional pathologist (within the same institution); must order in conjunction with Survey AUP
- Earn a maximum of 12.5 CME/SAM credits *(AMA PRA Category 1 Credits™)* per pathologist
- This activity meets the ABP CC Part IV Practice Performance Assessment requirements
- Two online activities per year

Let the CAP connect you to the IHC samples you need

CAP Immunohistochemistry (IHC) Validation Program

- The CAP will facilitate the exchange of tissue samples once a sufficient number of laboratories performing the same marker are identified.
- Samples will be exchanged twice a year based on availability.
- Each laboratory will receive its own individual results along with an anonymized summary report for all participants.

Sign up for this complimentary service to access those hard-to-obtain specimens.

To get started, visit cap.org and from the Laboratory Improvement tab, choose Proficiency Testing > Sample Exchange Registry to learn more and download a Contact Information Form.

Neuropathology Program NP/NP1

Program	Program Code	Challenges per Shipment
	NP/NP1	
Neuropathology online case review	▮	8

Additional Information

The Neuropathology program helps anatomic pathologists, neuropathologists, and trainees assess and improve their diagnostic skills and learn about new developments in neuropathology. Each shipment of this educational program includes eight cases that cover the spectrum of neoplastic and nonneoplastic disorders affecting the central and peripheral nervous systems, including infectious, degenerative, developmental, demyelinating, traumatic, toxic-metabolic, vascular, and neuromuscular diseases. In addition, each mailing will include a mini-symposium that focuses on a specific problem area in neuropathology, which relates to four of the eight cases.

Program Information

- NP - Online activity providing eight cases and a mini-symposium; reporting with CME/SAM credit is available for one pathologist; for each additional pathologist, order NP1
- Includes option to download program content
- NP1 - Reporting option with CME/SAM credit for each additional pathologist (within the same institution); must order in conjunction with Survey NP
- Earn a maximum of 10 CME/SAM credits *(AMA PRA Category 1 Credits™)* per pathologist
- This activity meets the ABP CC Part IV Practice Performance Assessment requirements
- Powered by DigitalScope technology
- Two online activities per year

Cytopathology

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Glass Slide Gynecologic Cytopathology PT Program with Glass Slide PAP Education PAP PT

Slide Type	Program Code					Challenges per Year	
	PAPCPT	PAPKPT	PAPMPT	PAPLPT	PAPJPT	Proficiency Testing	Education
Conventional	▮				▮	10	10
SurePath		▮		▮	▮		
ThinPrep			▮	▮	▮		
Individual Participant Response Form	APAPCPT	APAPKPT	APAPMPT	APAPLPT	APAPJPT		

Ordering Information

You will receive one shipment for proficiency testing (10 slides) and two additional shipments for your education (five slides each).

Follow these steps to order your PAP Proficiency Testing and PAP Education:

1. Choose the following:
   a. Slide Type program code (refer to table above)
   b. PAP Education series shipment dates (choose one)
      - Series 1
        - A mailing ships February
        - B mailing ships August
      - Series 2
        - A mailing ships May
        - B mailing ships November
   c. Add the PAP Education series number after the slide type program code (eg, PAPCPT1, PAPCPT2).
2. Order one Individual Participant Response Form code for each participating pathologist/cytotechnologist. Also include the PAP Education Series number after the program code (eg, APAPCPT1).
3. Select primary testing session option with two alternative date options using the Gynecologic Cytology Proficiency Testing Order Details Form.
4. Order PPTENR only if you are a laboratory possessing a CLIA license to perform gynecologic cytology where all personnel are performing proficiency testing at another CLIA location.

Additional Information

- Participants can receive laboratory reference interpretations and performance for the PAP Education slides within 20 minutes by fax.
- The PAP Education component meets the CAP Laboratory Accreditation Program requirement for participation in a peer educational program.

Program Information

- Ten glass slides for proficiency testing and ten glass slides for education
- APAPCPT/APAPKPT/APAPMPT/APAPLPT/APAPJPT - Reporting option with CME/CE credit for each pathologist/cytotechnologist (within the same institution); must order in conjunction with Survey PAPCPT/PAPKPT/PAPMPT/PAPLPT/PAPJPT
- Earn a maximum of 8 CME credits (*AMA PRA Category 1 Credits™*) per pathologist and a maximum of 8 CE credits per cytotechnologist for completing all challenges
- This activity meets the ABP CC Part IV Practice Performance Assessment requirements
- Three shipments per year; one shipment for proficiency testing (10 slides) and two shipments for education (five slides each)

Cytopathology Glass Slide Education Program PAPCE, PAPJE, PAPKE, PAPLE, PAPME Series 1 or 2

Slide Type	Program Code					Education Challenges per Year
	PAPCE	PAPKE	PAPME	PAPLE	PAPJE	
Conventional	▮				▮	10
SurePath		▮		▮	▮	
ThinPrep			▮	▮	▮	
Individual Participant Response Form	APAPCE	APAPKE	APAPME	APAPLE	APAPJE	

Ordering Information

Follow these steps to order your PAP Education:

1. Choose the following:
   a. Slide Type program code (refer to table above)
   b. PAP Education series shipment dates (choose one)
      - Series 1
        - A mailing ships February
        - B mailing ships August
      - Series 2
        - A mailing ships May
        - B mailing ships November
   c. Add the PAP Education series number after the slide type program code (eg, PAPCE1, PAPCE2)
2. Order one Individual Participant Response Form code for each participating pathologist/cytotechnologist. Also include the PAP Education series number after the program code (eg, APAPCE1).

Additional Information

- Participants can receive laboratory reference interpretations and performance for the PAP Education slides within 20 minutes by fax.
- The PAP Education component meets the CAP Laboratory Accreditation Program requirement for participation in a peer educational program.

Program Information

- Ten glass slides for education
- APAPCE/APAPJE/APAPKE/APAPLE/APAPME - Reporting option with CME/CE credit for each pathologist/cytotechnologist (within the same institution); must order in conjunction with Survey PAPCE/PAPJE/PAPKE/PAPLE/PAPME
- Earn a maximum of 8 CME credits (*AMA PRA Category 1 Credits™*) per pathologist and a maximum of 8 CE credits per cytotechnologist for completing all challenges
- This activity meets the ABP CC Part IV Practice Performance Assessment requirements
- Two shipments (five slides each)

CME CE credit

Human Papillomavirus (High Risk) for Cytopathology CHPVD, CHPVM, CHPVK, CHPVJ

Analyte/Procedure	Program Code				Challenges per Shipment
	CHPVD	CHPVM	CHPVK	CHPVJ	
HPV	▮	▮	▮	▮	5
High-risk HPV genotyping (optional)		▮		▮	5

Additional Information

- Each laboratory should choose the Survey that best reflects the transport media received in its facility. For Survey CHPVJ, participants must provide results for all three media types. If your laboratory receives two types of media, order the Survey that is most appropriate for your specific laboratory (CHPVD, CHPVM, or CHPVK).
- For laboratories that perform HPV genotyping using ThinPrep PreservCyt Transport medium on site, Survey CHPVM and select samples of Survey CHPVJ provide an opportunity to report specific HPV genotypes.
- The CAP does not report genotyping responses to the CMS.

Program Information

- Five simulated cervical specimens
- CHPVD - Digene® Specimen Transport Medium™ (STM)
- CHPVM - ThinPrep PreservCyt® Transport Medium
- CHPVK - SurePath Preservative Fluid Transport Medium and corresponding vial of diluent
- CHPVJ - Combination of Digene, ThinPrep PreservCyt, and SurePath transport mediums
- Three shipments per year

Touch Imprint/Crush Preparation TICP/TICP1

Procedure	Program Code	Challenges per Shipment
	TICP/TICP1	
Online slide and image program in rapid assessment case review	▮	4

Additional Information

- The TICP Program is designed to familiarize surgical pathologists, cytopathologists, and cytotechnologists with the cytomorphologic features of pathologic processes and tumors in touch imprints and crush or scrape preparations. These specimens are prepared either for intraoperative consultation (frozen section) or rapid on-site evaluation (ROSE) of tissue biopsies for adequacy and/or interpretation. Participants will learn to make an immediate adequacy assessment, assign the process to a general category, and triage the specimen to appropriate ancillary studies. Participants will review digital whole slides of the TICP preparations (hematoxylin & eosin, modified Wright-Giemsa, and/or Papanicolaou stains), static images of the preparation and ancillary studies, and clinical history/radiographic findings to reach a diagnosis. Each case has a complete description of entities in the differential diagnosis along with a discussion of the correct interpretation.
- Participants will receive immediate feedback on interpretations, ancillary studies, and case-related adequate assessment.
- The cases will be comprised of specimens from the bone and retroperitoneal/liver.
- May include rarely captured cases that may not be available on the glass slide.
- See system requirements on page 13.

Program Information

- TICP - Four online assessment challenges with clinical history; TICP provides CME/SAM/CE credit for one pathologist or cytotechnologist; for each additional pathologist or cytotechnologist, order TICP1
- TICP1 - Reporting option with CME/SAM/CE credit for each additional pathologist/technologist (within the same institution); must order in conjunction with Survey TICP
- Earn a maximum of 10 CME/SAM credits (*AMA PRA Category 1 Credits™*) per pathologist and a maximum of 10 CE credits per cytotechnologist for completion of an entire year
- This activity meets the ABP CC Part IV Practice Performance Assessment requirements
- Online, whole slide images powered by DigitalScope technology
- Two online activities per year; your CAP shipping contact will be notified via email when the activity is available

Nongynecologic Cytopathology Education Program NGC/NGC1

Procedure	Program Code	Challenges per Shipment
	NGC/NGC1	
Nongynecologic cytopathology case review – glass slides	▮	5
Nongynecologic cytopathology case review – online	▮	5 per year

Additional Information

- The Nongynecologic Cytopathology Education (NGC) program is an interlaboratory educational opportunity to assess participants' screening and interpretive skills. The NGC program is unsuitable for proficiency testing as these cases are chosen for their educational value. Cases may incorporate static online images that incorporate radiology and multiple aspects of pathology to enhance the interpretation.
- Participants can access laboratory reference interpretations and performance for the glass slides within 20 minutes by fax, providing rapid educational feedback, peer comparison, and additional review time.
- Additional online advanced education cases provide immediate feedback on interpretation selection, follow-up recommendations, and case-related educational questions.
- See system requirements on page 13.

Program Information

- NGC - Five glass slides; five online advanced education cases; one laboratory response form and two individual response forms
- NGC1 - Reporting option with CME/CE credit for each additional pathologist/ cytotechnologist (within the same institution); must order in conjunction with Survey NGC
- Earn a maximum of 25 CME credits *(AMA PRA Category 1 Credits™)* per pathologist and a maximum of 25 CE credits per cytotechnologist for completing the glass slides and online cases
- This activity meets the ABP CC Part IV Practice Performance Assessment requirements
- Online, whole slide images powered by DigitalScope technology
- Four shipments per year

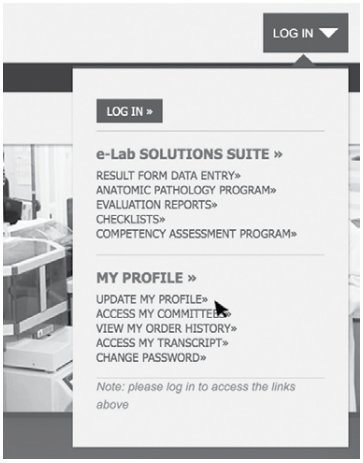
CME CE credit

Have you created or updated your CAP Profile?

Each laboratory staff member should have their own profile. Your profile is transferrable when you leave your current position. Use it to maintain information about yourself, including:

- Business affiliations
- Certifications
- Contact preferences
- Inspector-related information
- Personal contact information
- Specialties and skills
- Addresses

To create or update your profile, visit cap.org, log in, and click on UPDATE MY PROFILE.



Digital Slide Program in Fine-Needle Aspiration FNA/FNA1

Procedure	Program Code	Challenges per Shipment
	FNA/FNA1	
Online program in fine-needle aspiration case review	▮	5

Additional Information

- This program focuses on FNA diagnostic dilemmas in practice. Online cases, which consist of whole slide images and static images, provide immediate feedback on interpretation selection, ancillary studies selection, and case-related educational questions.
- Cases will focus on lymph node and subcutaneous topics.
- May include rarely captured cases that may not be available on the glass slide.
- See system requirements on page 13.

Program Information

- FNA - Five online diagnostic challenges; FNA provides CME/CE credit for one pathologist or cytotechnologist; for each additional pathologist or cytotechnologist, order FNA1
- FNA1 - Reporting option with CME/CE credit for each additional pathologist/ cytotechnologist (within the same institution); must order in conjuction with Survey FNA
- Earn a maximum of 10 CME credits *(AMA PRA Category 1 Credits™)* per pathologist and a maximum of 10 CE credits per cytotechnologist
- This activity meets the ABP CC Part IV Practice Performance Assessment requirements
- Online, whole slide images powered by DigitalScope technology
- Two online activities per year; your CAP shipping contact will be notified via email when the activity is available

CME CE credit

Fine-Needle Aspiration Glass Slide FNAG/FNAG1

Procedure	Program Code	Challenges per Shipment
	FNAG/FNAG1	
Fine-needle aspiration glass slide case review	▮	5

Additional Information

- The Fine-Needle Aspiration Glass Slide Education program is an interlaboratory educational opportunity to assess participants' screening and interpretive skills. FNAG cases may include more than one slide of varying stains and/or preparations used on fine-needle aspirations.
- Cases may include static online images that incorporate radiology and multiple aspects of pathology to support the interpretation.
- Participants can access laboratory reference interpretations and performance for the glass slides within 20 minutes by fax, providing rapid educational feedback, peer comparison, and additional review time.

Program Information

- FNAG - Five cases consisting of glass slides and selected online images, representing a variety of conditions; one laboratory response form and two individual response forms
- FNAG1 - Reporting option with CME/CE credit for each additional pathologist/cytotechnologist (within the same institution); must order in conjunction with Survey FNAG
- Earn a maximum of 10 CME credits *(AMA PRA Category 1 Credits™)* per pathologist/resident and a maximum of 10 CE credits per cytotechnologist
- This activity meets the ABP CC Part IV Practice Performance Assessment requirements
- Two shipments per year

CME CE credit

Ultrasound Features of Superficial and Palpable Lesions

This ruggedly constructed guide is the ideal reference tool for clinicians to use while performing ultrasound-guided fine-needle aspiration (USFNA). Compact and easy-to-follow, it includes hundreds of comparative images and concise descriptions covering normal anatomy and abnormalities of superficial body sites. Helpful clinical hints are offered throughout the book.

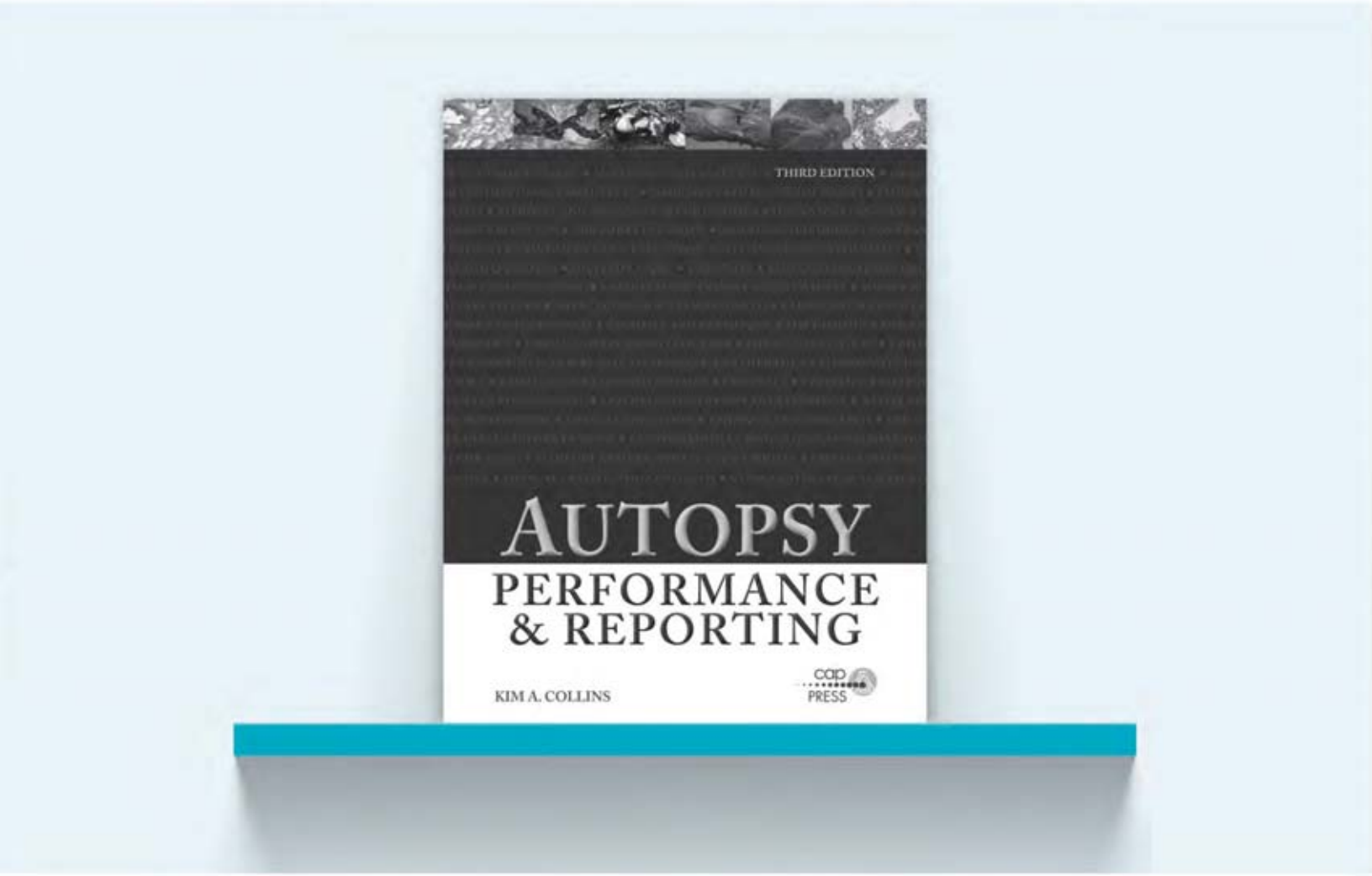
Order Ultrasound Features of Superficial and Palpable Lesions (PUB128)

View sample pages and order online:

- printed books at estore.cap.org

Item number: PUB128
Spiral bound; 200 pages; 375 images and illustrations; 2018

Take a modern approach to autopsy pathology



With more than 1,000 high-quality color images, the third edition of *Autopsy Performance & Reporting* includes:

- Numerous tables and checklists for fast, thorough reference
- Role of new technology, including molecular pathology, ancillary laboratory studies, and 3-D radiography
- Detailed autopsy procedures for specific organ systems and patient populations
- Guidelines for autopsy reporting and quality assurance

Autopsy Performance & Reporting

Item number: **PUB126**

Hardcover; 472 pages; 1,000+ color images and tables; 2017

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21 Forensic Sciences

Meet your certification and licensure requirements for Forensic Pathology.

Our Forensic Pathology (FR/FR1) program is designed to meet the educational needs of pathologists, residents, fellows, medical examiners, coroners, investigators, and analysts.

- Earn up to 12.5 CME or 12.5 CE credits.
- New in 2019—Earn up to 12.5 SAM credits.

Discontinued Programs

Forensic Identity, Nuclear DNA Analysis (FID)

Forensic Sciences

Analytes/procedures in **bold** type are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Forensic Pathology FR/FR1

Procedure	Program Code	Challenges per Shipment
	FR/FR1	
Forensic pathology cases	▮	5

Additional Information

- Cases may include or reflect anthropologic materials, ballistics, dental identification, DNA identification, environmental pathology, forensic evidence, injury pattern, medicolegal issues, toxicology, and trace evidence.
- FR/FR1 is for hospital-based pathologists, forensic pathologists, residents, fellows, and medical examiners/coroners. This educational program is also designed for investigators, analysts, and technicians/technologists.

Program Information

- FR - Online activity containing five case studies illustrating gross and/or microscopic slides and questions related to medicolegal decision making; CME/SAM or CE credit is available for one pathologist or investigator. For each additional pathologist/investigator, order FR1
- FR1 - Additional pathologist or investigator (within the same institution) reporting option with CME/SAM or CE credit; must order in conjunction with Survey FR
- Includes option to download program content
- Earn a maximum of 12.5 CME/SAM credits (*AMA PRA Category 1 Credits™*) per pathologist and a maximum of 12.5 CE credits per investigator for completion of an entire year
- This activity meets the ABP CC Part IV Practice Performance Assessment requirements
- Two online activities per year

Vitreous Fluid, Postmortem VF

Analyte	Program Code	Challenges per Shipment
	VF	
Acetone	▮	3
Chloride	▮	3
Creatinine	▮	3
Ethanol	▮	3
Glucose	▮	3
Potassium	▮	3
Sodium	▮	3
Vitreous urea nitrogen	▮	3

Program Information

- Three 5.0-mL synthetic vitreous fluid specimens
- For forensic and other toxicology laboratories that perform quantitative analysis of vitreous fluid
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

Find a practical guide to toxicology laboratory operations with this resource

Clinical Toxicology Testing
***A Guide for Laboratory Professionals* (PUB220)**

Complex issues face the laboratory director or pathologist who offers toxicology services. This thorough reference book will guide both experienced physicians and those in training through the pharmacological principles, testing menus, and methodologies for toxicology testing.

Available in print and ebook formats.

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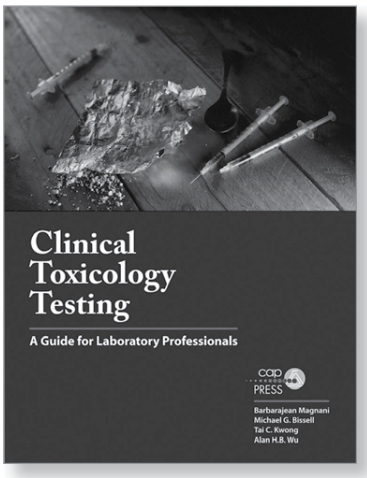


Item number: PUB220
Softcover; 304 pages; 2012

Forensic Toxicology, Criminalistics FTC

Analyte	Program Code	Challenges per Shipment
	FTC	
See drug listing below	▮	4

The American Society of Crime Laboratory Directors/Laboratory Accreditation Board Proficiency Review Committee (ASCLD/LAB PRC) has approved Survey FTC.

Program Information

- Three 20.0-mL whole blood specimens and one 20.0-mL synthetic urine specimen
- For crime and hospital laboratories that have forensic toxicology divisions performing qualitative and quantitative analysis of drugs in whole blood specimens along with a urine qualitative challenge
- Two shipments per year

FTC Program Drug Listing

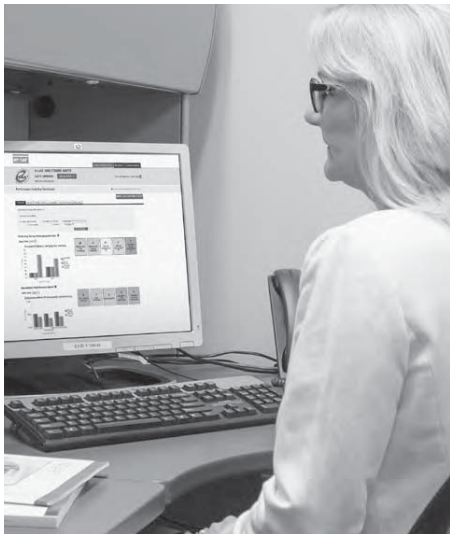
Challenges will include a mix of drugs from the list below.

6-acetylmorphine (6-AM)
7-aminoclonazepam
7-aminoflunitrazepam
Acetaminophen
Alpha-hydroxyalprazolam
Alprazolam
Amitriptyline
Amphetamine
Benzoylecgonine
Brompheniramine
Butalbital
Carisoprodol
Chlorpheniramine
Clonazepam
Cocaethylene
Cocaine
Codeine
Cyclobenzaprine*
Delta-9-THC
Delta-9-THC-COOH
Desipramine
Desmethylcyclobenzaprine
Dextromethorphan
Diazepam
Diphenhydramine
Doxepin
Ecgonine ethyl ester
Ecgonine methyl ester
Ephedrine
Fentanyl*
Fluoxetine
Flurazepam*
Gamma-hydroxybutyrate (GHB)
Hydrocodone
Hydromorphone
Imipramine
Ketamine
Lorazepam
Lysergic acid diethylamide (LSD)
Meperidine*
Meprobamate
Methadone
Methadone metabolite (EDDP)
Methamphetamine
Methylenedioxyamphetamine (MDA)
Methylenedioxymethamphetamine (MDMA)
Morphine*
N-desmethyltramadol
Nordiazepam
Nordoxepin
Norfentanyl
Norfluoxetine
Norketamine
Norpropoxyphene
Norsertraline
Nortriptyline
Oxazepam
Oxycodone
Oxymorphone
Paroxetine
Phencyclidine
Phenethylamine
Phenobarbital
Phentermine
Phenytoin
Propoxyphene
Pseudoephedrine
Salicylate
Secobarbital
Sertraline
Temazepam
Tramadol*
Trazodone
Zolpidem

*and/or metabolite(s)

Refer to Section 9, Toxicology, for a more comprehensive selection of toxicology offerings.

22 Analyte/Procedure Index



Simplify analysis and reporting of PT and accreditation performance using the Performance Analytics Dashboard.

The complimentary dashboard helps you manage your CAP PT and accreditation performance.

- Quickly identify trends to mitigate risk by accessing up to three years or three accreditation cycles of data.
- Benchmark your laboratory against your peers and CAP-wide performance.
- Consolidate multiple CAP numbers to view a single dashboard for an entire system.

Analyte/Procedure Index

The following Analyte/Procedure Index is a comprehensive listing of analytes and corresponding CAP program options.

Analytes/procedures **in bold type** whose corresponding program codes are **bold** are regulated for proficiency testing by the Centers for Medicare & Medicaid Services (CMS).

Laboratories must perform five challenges three times per year (as noted by boldface) for analytes that are regulated by the CMS.

The **X** in the LAP ENR column denotes the CAP programs that can be used to fulfill the proficiency testing enrollment requirements for CAP-accredited laboratories. Refer to program descriptions in this catalog to determine compatibility with your specific methodologies.

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
1,5-anhydroglucitol		AG	1,5-Anhydroglucitol	71
1,25 dihydroxy vitamin D		BMV1	Bone Markers and Vitamins	86
3-methoxytyramines		N/NX	Urine Chemistry, Special	69
4-hydroxytriazolam		DFC	Drug-Facilitated Crime	108
5-hydroxyindoleacetic acid, qualitative		N/NX	Urine Chemistry, Special	69
5-hydroxyindoleacetic acid, quantitative	X	N/NX	Urine Chemistry, Special	69
6-acetylmorphine (6-AM)		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UT	Urine Toxicology	96
7-aminoclonazepam		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
7-aminoflunitrazepam		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
10q (*PTEN*) deletion		GLI	Glioma	259
11-deoxycortisol		Y/YY	Ligand Assay, Special	84
11-hydroxy-THC		THCB	Blood Cannabinoids	105
17-hydroxycorticosteroids		N/NX	Urine Chemistry, Special	69
17-hydroxyprogesterone	X	Y/YY	Ligand Assay, Special	84
17-ketosteroids		N/NX	Urine Chemistry, Special	69
25-OH vitamin D	X	ABVD	Accuracy-Based Vitamin D	85
		LN40	Vitamin D Cal Ver/Lin	129

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
25-OH vitamin D (cont.)	X	VITD	25-OH Vitamin D	84
50:50 mixing study, APTT		CGE/CGEX	Coagulation, Extended	161
		CGS1	Coag Special, Series 1	162–163
50:50 mixing study, PT		CGE/CGEX	Coagulation, Extended	161
		CGS1	Coag Special, Series 1	162–163
ABO grouping	X	**J, J1**	Transfusion Medicine	218
	X	**JAT**	Transfusion Medicine, Automated	219
		JATE1	Transfusion Medicine, Automated, Educational	219
		JATQ	Quality Cross Check, Transfusion Medicine	49
		TMCA	Transfusion Medicine, Competency Assessment	223
ABO subgroup typing		ABOSG	ABO Subgroup Typing	220
Acetaminophen	X	CZ, CZ2X, CZX, Z	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FTC	Forensic Toxicology, Criminalistics	104
		LN3	TDM Cal Ver/Lin	121
	X	SDS	Serum Drug Screen	101
		T	Toxicology	96
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
Acetone	X	AL1	Whole Blood Alcohol/ Volatiles	101
	X	AL2	Serum Alcohol/Volatiles	101
		SDS	Serum Drug Screen	101
		VF	Vitreous Fluid, Post-mortem	101
Acid-fast smear	X	**E**	Mycobacteriology	188
	X	**E1**	Mycobacteriology, Ltd	188
Acid phosphatase	X	C3, C3X, CZ, CZ2X, CZX	Chemistry and TDM	56–58

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Acid phosphatase (cont.)		CZQ	Quality Cross Check, Chemistry and TDM	41
Activated clotting time	X	CT, CT1, CT2, CT3, CT5	ACT	164
		CTQ, CT1Q, CT2Q, CT3Q, CT5Q	Quality Cross Check, ACT	48
		POC14, POC15, POC16	Competency Activated Clotting Time	54
Activated partial thromboplastin time	X	**CGB**	Basic Coagulation	160
		CGE/CGEX	Coagulation, Extended	161
	X	**CGL**	Coagulation, Limited	160
		CGLQ	Quality Cross Check, Coagulation, Limited	47
		CGS1	Coag Special, Series 1	162–163
		CGS3	Coag Special, Series 3	162–163
		CGS4	Coag Special, Series 4	162–163
		DBGN	Anticoagulant Monitoring, Dabigatran	163
		FNPX	Anticoagulant Monitoring, Fondaparinux	163
		RVBN	Anticoagulant Monitoring, Rivaroxaban	163
Activated protein C resistance		CGE/CGEX	Coagulation, Extended	161
		CGS2	Coag Special, Series 2	162–163
Active vitamin B12		MMA	MMA and Active Vitamin B12	82
Acylcarnitine		BGL	Biochemical Genetics	243
ADAMTS-13		CGS7	ADAMTS-13	162–163
Adenovirus		GIP	Gastrointestinal Panel	203
	X	**GIP5**	Gastrointestinal Panel	203
		ID2	Nucleic Acid Amp, Respiratory	198
	X	**IDR**	Infectious Disease Respiratory Panel	202
		VLS2	Viral Load	199
	X	**VR1**	Virology Culture	196
	X	**VR2**	Viral Antigen by DFA	196
	X	**VR4**	Viral Antigen by EIA and Latex	196
Adenovirus 40/41		SP, SPN	Stool Pathogen	184
Adjustable micropipette Cal V/L		I	Instrumentation	131
Adrenocorticotropic hormone (ACTH)	X	TM/TMX	Tumor Markers	89

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Alanine aminotransferase (ALT/SGPT)	X	**C1, C3, C3X, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Albumin	X	**C1, C3, C3X, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FLD	Body Fluid	72
		FLDQ	Quality Cross Check, Body Fluid Chemistry	42
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
		SPE	Protein Electrophoresis	76
Albumin, CSF	X	M, OLI	CSF Chemistry and Oligoclonal Bands	74
Albumin, urine		ABU	Accuracy-Based Urine	113
		LN20	Urine Albumin	126
	X	U	Urine Chemistry, General	68
Albumin: creatinine ratio		ABU	Accuracy-Based Urine	113
		LN20	Urine Albumin Cal Ver/Lin	126
		U	Urine Chemistry, General	68
		UMC	Urine Albumin Creatinine	153
Alcohol, serum	X	**AL2**	Serum Alcohol/Volatiles	101
		LN11	Serum Ethanol Cal Ver/Lin	124
Alcohol, whole blood	X	**AL1**	Whole Blood Alcohol/Volatiles	101
Aldolase		ADL	Aldolase	71
Aldosterone, serum	X	RAP	Renin and Aldosterone	89
Aldosterone, urine	X	N/NX	Urine Chemistry, Special	69
Alkaline phosphatase (ALP)	X	**C1, C3, C3X, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Alkaline phosphatase (ALP) (cont.)		FLD2	Body Fluid Chemistry 2	73
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Allergens (specific)		SE	Diagnostic Allergy	211
Alpha-1 antitrypsin	X	**IG/IGX**	Immunology, General	206
		LN7	Immunology Cal Ver/Lin	123
Alpha-1 antitrypsin genotyping	X	AAT	Alpha-1 Antitrypsin Genotyping	243
Alpha-1 globulin		SPE	Protein Electrophoresis	76
Alpha-2 globulin		SPE	Protein Electrophoresis	76
Alpha-2-antiplasmin		CGE/CGEX	Coagulation, Extended	161
Alpha-2-macroglobulin		A2MG	Alpha-2-Macroglobulin	208
Alpha-fetoprotein (AFP), amniotic fluid	X	FP/FPX	Maternal Screen	87
Alpha-fetoprotein (AFP), serum	X	**FP/FPX**	Maternal Screen	87
	X	**K/KK**	Ligand Assay, General	82
		LN5	Ligand Assay Cal Ver/Lin	121–122
		LN5S	Ligand Assay, Siemens Cal Ver/Lin	121–122
Alpha-hydroxyalprazolam		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UT	Urine Toxicology	96
Alpha-thalassemia		HGM	Hemoglobinopathies, Molecular Methods	245
Alprazolam		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		OFD	Oral Fluid for Drugs of Abuse	100
		UT	Urine Toxicology	96
Aluminum	X	R	Trace Metals	78
		TMU	Trace Metals, Urine	103
Aluminum, whole blood		TMWB	Trace Metals, Whole Blood	103
Amikacin	X	CZ, CZ2X, CZX, Z	Chemistry and TDM	56–58

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Amikacin (cont.)		CZQ	Quality Cross Check, Chemistry and TDM	41
		LN3	TDM Cal Ver/Lin	121
Amino acids, qualitative	X	BGL	Biochemical Genetics	243
Amino acids, quantitative		BGL	Biochemical Genetics	243
Amitriptyline		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
	X	ZT	TDM, Special	60
Ammonia		C3, C3X, CZ, CZ2X, CZX	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		LN32	Ammonia Cal Ver/Lin	128
Amniotic fluid leakage (nitrazine)		AFL	Amniotic Fluid Leakage	148
Amobarbital		DFC	Drug-Facilitated Crime	108
Amphetamine		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
		UTCO	Urine Toxicology Carryover	133
Amphetamine group		DMPM	Drug Monitoring for Pain Management	107
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
Amylase	X	**C1, C3, C3X, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FLD	Body Fluid	72
		FLDQ	Quality Cross Check, Body Fluid Chemistry	42
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Amylase (cont.)		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Amylase, pancreatic	X	**C1, C3, C3X, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
Amylase, urine		LN6	Urine Chemistry Cal Ver/Lin	122
	X	U	Urine Chemistry, General	68
Anabasine		NTA	Nicotine and Tobacco Alkaloids	102
Analytical balance		I	Instrumentation	131
Anaplasma phagocytophilum		TTD	Antibody Detection-Tick-Transmitted Diseases	204
Anaplastic lymphoma kinase		PM6	Anaplastic Lymphoma Kinase IHC	273
Androstenedione	X	Y/YY	Ligand Assay, Special	84
Angiotensin converting enzyme		ACE	Angiotensin Converting Enzyme	71
Anti-A titer		ABT, ABT1	Antibody Titer	221
Anti-B titer		ABT3	Antibody Titer	221
Anti-beta-2-glycoprotein		CGE/CGEX	Coagulation, Extended	161
Antibody detection	X	**J, JAT**	Transfusion Medicine	218–219
		JATE1	Transfusion Medicine, Automated, Educational	219
		JATQ	Quality Cross Check, Transfusion Medicine	49
	X	PS	Platelet Serology	223
		TMCA	Transfusion Medicine, Competency Assessment	223
Antibody detection/ identification (HLA)	X	MX1B, MX1C, MX1E, MXB, MXC	HLA Analysis, Class I	234–235
	X	MX2B, MX2C, MX2E, MXB, MXC	HLA Analysis, Class II	234–235
Antibody identification		ETME1	Expanded Transfusion Medicine Exercises	227
	X	**J, JAT**	Transfusion Medicine	218–219
		JATE1	Transfusion Medicine, Automated, Educational	219
		TMCA	Transfusion Medicine, Competency Assessment	223
Antibody screen (HLA)		MX1B, MX1C, MX1E, MXB, MXC	HLA Analysis, Class I	234–235
Antibody screen (HLA) (cont.)		MX2B, MX2C, MX2E, MXB, MXC	HLA Analysis, Class II	234–235
Anticardiolipin IgA, qualitative		ACL, APS	Antiphospholipid Antibody	209
Anticardiolipin IgA, quantitative		ACL, APS	Antiphospholipid Antibody	209
Anticardiolipin IgG, IgM, polyclonal; qualitative	X	ACL, APS	Antiphospholipid Antibody	209
Anticardiolipin IgG, IgM, polyclonal; quantitative		ACL, APS	Antiphospholipid Antibody	209
Anti-CCP		CCP	Cyclic Citrullinated Peptide Antibody	210
Anticentromere antibody		S2	Immunology, Special	207
Antichromatin antibody		ACA	Antichromatin Antibody	208
Anti-CMV, total	X	VM3	Viral Markers-Series 3	228
	X	VR3	Infectious Disease Serology	204
Anti-CMV, IgG, IgM	X	VR3	Infectious Disease Serology	204
Anti-D titer		ABT, ABT2	Antibody Titer	221
Anti-DNA (ds) antibody, qualitative	X	S2, S4	Immunology, Special	207
Anti-DNA (ds) antibody, quantitative		S2, S4	Immunology, Special	207
Anti-DNA topoisomerase (Scl-70)		RDS	Rheumatic Disease Special Serologies	211
Antideamidated gliadin peptide antibody, IgA, IgG; qualitative	X	CES, CESX	Celiac Serology	210
Antideamidated gliadin peptide antibody, IgA, IgG; quantitative		CES, CESX	Celiac Serology	210
Antideamidated gliadin peptide antibody screen, IgA, IgG		CES, CESX	Celiac Serology	210
Antideamidated gliadin peptide/tissue transglutaminase antibody screen, IgA, IgG		CES, CESX	Celiac Serology	210
Antiendomysial antibody IgA, qualitative		CES, CESX	Celiac Serology	210
Antiendomysial antibody IgA, quantitative		CES, CESX	Celiac Serology	210
Antiendomysial antibody IgG, qualitative		CES, CESX	Celiac Serology	210
Antiendomysial antibody IgG, quantitative		CES, CESX	Celiac Serology	210
Antifilamentous actin IgG antibody		FCN	Antifilamentous Actin Antibody	208
Antifungal drugs monitoring		AFD	Antifungal Drugs Monitoring	106
Antifungal susceptibility testing	X	F	Mycology and Aerobic Actinomycetes	189

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Antifungal susceptibility testing (cont.)	X	F1	Yeast	189
Antigen detection, bacterial		CDF2	*Clostridium difficile* Detection	181
	X	**CDF5**	*Clostridium difficile* Detection	182
	X	**D**	Bacteriology	173
	X	**D4**	Bacteriology, Limited	176
	X	**D6**	Rapid Group A Strep	178
	X	**D8**	Group B Strep	179
	X	D9	Rapid Group A Strep, Waived	178
	X	**HC1**	*C. trachomatis* by DFA	182
	X	**HC3**	*C. trachomatis* by EIA	182
		LBAS	*Legionella pneumophila*	179
	X	**MC1**	Microbiology Combination	176
	X	**MC2**	Microbiology Combination	176
	X	**MC4**	Urine Colony Count Combination	177
	X	**MC5**	Throat Culture/Rapid Strep Combination	177
		POC4	POC Strep Screen Competency	52
		SBAS	*Streptococcus pneumoniae*	179
	X	**VS**	Vaginitis Screen	185
Antigen detection, viral	X	**HC2**	HSV by DFA	197
	X	**VR2**	Viral Antigen Detection by DFA	196
	X	**VR4**	Viral Antigen Detection by EIA and Latex	196
Antigliadin antibody IgA, IgG, qualitative		CES, CESX	Celiac Serology	210
Antigliadin antibody IgA, IgG, quantitative		CES, CESX	Celiac Serology	210
Antiglomerular basement membrane, qualitative	X	S2	Immunology, Special	207
Antiglomerular basement membrane, quantitative		S2	Immunology, Special	207
Anti-HAV, IgM	X	VM5	Viral Markers-Series 5	229
Anti-HAV, IgG	X	VM1	Viral Markers-Series 1	228
Anti-HAV, total		VM1	Viral Markers-Series 1	228
Anti-HBc, IgM	X	**VM5**	Viral Markers-Series 5	229
Anti-HBc, total	X	**VM1**	Viral Markers-Series 1	228
Anti-HBe	X	VM2	Viral Markers-Series 2	228
Anti-HBs, qualitative	X	VM1	Viral Markers-Series 1	228
Anti-HBs, quantitative		VM1	Viral Markers-Series 1	228
Anti-HCV	X	RHCVW	Anti-HCV, Rapid Methods, Waived	229
Anti-HCV (cont.)	X	VM1	Viral Markers-Series 1	228
Antihistidyl t-RNA synthetase (Jo-1)		RDS	Rheumatic Disease Special Serologies	211
Antihistone antibody		AHT	Antihistone Antibody	208
Anti-HIV-1	X	**AHIV**	Anti-HIV Rapid Methods	229
	X	AHIVW	Anti-HIV Rapid Methods	229
	X	**VM1**	Viral Markers-Series 1	228
Anti-HIV-2	X	VM1	Viral Markers-Series 1	228
	X	**AHIV**	Anti-HIV Rapid Methods	229
Anti-HIV-1/2	X	**AHIV**	Anti-HIV Rapid Methods	229
	X	AHIVW	Anti-HIV Rapid Methods	229
	X	**VM1**	Viral Markers-Series 1	228
Anti-HIV-1/2, HIV-1 p24 antigen	X	**VM6, VM6X**	Viral Markers-Series 6	229
Anti-HTLV-I/II		VM3	Viral Markers-Series 3	228
Anti-Jo-1 (antihistidyl t-RNA synthetase)		RDS	Rheumatic Disease Special Serologies	211
Anti-LKM		LKM	Liver-Kidney Microsomal Antibody	211
Antimicrobial susceptibility testing	X	**D**	Bacteriology	173
	X	**D2**	Urine Cultures	175
	X	**D4**	Bacteriology, Limited	176
	X	**D7**	Throat, Urine Cultures	175
		MBT	Microbiology Bench Tools Competency	174
	X	**MC1**	Microbiology Combination with GC	176
	X	**MC2**	Microbiology Combination	176
	X	**MC5**	Throat Culture/Rapid Strep	177
Antimitochondrial antibody, qualitative	X	S2	Immunology, Special	207
Antimitochondrial antibody, quantitative		S2	Immunology, Special	207
Antimitochondrial M2 antibody		H	Antimitochondrial M2 Antibody	208
Anti-MPO		S2	Immunology, Special	207
Antimüllerian hormone	X	AMH	Antimüllerian Hormone	84
Antimycobacterial susceptibility testing	X	**E**	Mycobacteriology	188
		MTBR	Molecular MTB Detection and Resistance	188
Antineutrophil cytoplasmic antibody (ANCA)		S2	Immunology, Special	207
Antinuclear antibody (ANA)	X	**ANA, IL**	Immunology	206
Antiparietal cell antibody		APC	Autoimmune Gastritis Markers	208

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Antiphospholipid antibody		ACL	Antiphospholipid Antibody	209
Antiphosphatidylserine antibodies (IgG, IgM, and IgA)		APS	Antiphosphatidylserine Antibodies	209
Anti-PR3		S2	Immunology, Special	207
Antiribosomal P antibody		ARP	Antiribosomal P Antibody	209
Anti-RNP antibody, qualitative	X	S2	Immunology, Special	207
Anti-RNP antibody, quantitative		S2	Immunology, Special	207
Anti-*Saccharomyces cerevisiae* antibody		ASC	Anti-*Saccharomyces cerevisiae* Antibody	209
Anti-Scl-70 (anti-DNA topoisomerase)		RDS	Rheumatic Disease Special Serologies	211
Anti-Sm antibody, qualitative	X	S2	Immunology, Special	207
Anti-Sm antibody, quantitative		S2	Immunology, Special	207
Anti-Sm/RNP antibody, qualitative	X	S2	Immunology, Special	207
Anti-Sm/RNP antibody, quantitative		S2	Immunology, Special	207
Antismooth muscle antibody, qualitative	X	S2	Immunology, Special	207
Antismooth muscle antibody, quantitative		S2	Immunology, Special	207
Antisperm antibody IgG		ASA	Semen Analysis	156
Anti-SSA antibody, qualitative	X	S2	Immunology, Special	207
Anti-SSA antibody, quantitative		S2	Immunology, Special	207
Anti-SSB antibody, qualitative	X	S2	Immunology, Special	207
Anti-SSB antibody, quantitative		S2	Immunology, Special	207
Anti-SSA/SSB antibody, qualitative	X	S2	Immunology, Special	207
Anti-SSA/SSB antibody, quantitative		S2	Immunology, Special	207
Antistreptolysin O (ASO)	X	**ASO, IL**	Immunology	206
Antithrombin (activity, Ag)		CGE/CGEX	Coagulation, Extended	161
		CGS2	Coag Special, Series 2	162–163
		LN35	Thrombophilia Cal Ver/Lin	129
Antithyroglobulin antibody, qualitative	X	S2, S4	Immunology, Special	207
Antithyroglobulin antibody, quantitative		S2, S4	Immunology, Special	207
Antithyroid microsomal, qualitative	X	S2, S4	Immunology, Special	207
Antithyroid microsomal, quantitative		S2, S4	Immunology, Special	207
Antithyroid peroxidase, qualitative	X	S2, S4	Immunology, Special	207
Antithyroid peroxidase, quantitative		S2, S4	Immunology, Special	207
Antitissue transglutaminase antibody IgA, qualitative	X	CES, CESX	Celiac Serology	210
Antitissue transglutaminase antibody IgA, quantitative		CES, CESX	Celiac Serology	210
Antitissue transglutaminase antibody IgG, qualitative		CES, CESX	Celiac Serology	210
Antitissue transglutaminase antibody IgG, quantitative		CES, CESX	Celiac Serology	210
Anti-*Trypanosoma cruzi*		VM4	Viral Markers-Series 4	228
Apixaban		APXBN	Anticoagulant Monitoring, Apixaban	163
Apolipoprotein A1	X	ABL	Accuracy-Based Lipids	112
	X	C3, C3X, CZ, CZ2X, CZX	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
Apolipoprotein B	X	ABL	Accuracy-Based Lipids	112
	X	C3, C3X, CZ, CZ2X, CZX	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
Apolipoprotein E (*APOE*) genotyping	X	APOE	Apolipoprotein E (*APOE*) genotyping	243
Aripiprazole		T	Toxicology	96
		UT	Urine Toxicology	96
Arsenic, urine		TMU	Trace Metals, Urine	103
Arsenic, whole blood		TMWB	Trace Metals, Whole Blood	103
Arthropod identification		TMO	Ticks, Mites, and Other Arthropods	193
Aspartate aminotransferase (AST/SGOT)	X	**C1, C3, C3X, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Aspirin assay		PIA, PIAX	Drug-Specific Platelet Aggregation	167
Astrovirus		GIP	Gastrointestinal Panel	203
	X	**GIP5**	Gastrointestinal Panel	203
Atenolol		T	Toxicology	96
		UT	Urine Toxicology	96
Atropine		T	Toxicology	96
		UT	Urine Toxicology	96
Automated WBC differential	X	**FH1-FH4, FH6, FH9, FH10, FH13, FH1P-FH4P, FH6P, FH9P, FH10P, FH13P**	Hematology Automated Differential	136
		FH3Q, FH4Q, FH6Q, FH9Q	Quality Cross Check, Automated Hematology Series	45
Autopsy pathology		AUP/AUP1	Autopsy Pathology	275
B-ALL		BALL	B-ALL Minimal Residual Disease	214
B-type natriuretic peptides	X	BNP	B-Type Natriuretic Peptides, 2 Chall	61
	X	BNP5	B-Type Natriuretic Peptides, 5 Chall	61
		BNPQ	Quality Cross Check, B-Type Natriuretic Peptides	41
		LN30	B-Type Natriuretic Peptides Cal Ver/Lin	127
	X	PCARI, PCARM, PCARMX	Plasma Cardiac Markers	65
		POC12	Competency Plasma Cardiac Markers	53
Babesia microti		TTD	Antibody Detection of Tick-Transmitted Diseases	204
Bacterial antigen detection		CDF2	*Clostridium difficile* Detection	181
	X	**CDF5**	*Clostridium difficile* Detection	182
	X	**D**	Bacteriology	173
	X	**D4**	Bacteriology, Limited	176
	X	**D6**	Rapid Group A Strep	178
	X	**HC1**	*C. trachomatis* by DFA	182
	X	**HC3**	*C. trachomatis* by EIA	182
		LBAS	*Legionella pneumophila* Antigen Detection	179
	X	**MC1**	Microbiology Combination	176
	X	**MC2**	Microbiology Combination	176

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Bacterial antigen detection (cont.)	X	**MC4**	Urine Colony Count Combination	177
	X	**MC5**	Throat Culture/Rapid Strep Combination	177
		POC4	POC Strep Screen Competency	52
		SBAS	*S. pneumoniae* Antigen Detection	179
	X	**VS**	Vaginitis Screen	185
Bacterial detection in platelets		BDP, BDPV	Bacterial Detection, Platelets	226
	X	**BDP5, BDPV5**	Bacterial Detection, Platelets	226
Bacterial identification	X	**D**	Bacteriology	173
	X	**D1, D2, D3, D7**	Throat, Urine, GC Cultures	175
	X	**D4**	Bacteriology, Limited	176
	X	**D8**	Group B Strep	179
		DEX	Expanded Bacteriology	174
	X	**HC6/HC6X**	*C. trachomatis*/GC by Nucleic Acid Amp	186
	X	**HC7**	*C. trachomatis*/GC DNA by NAA	186
	X	**IDR**	Infectious Disease, Respiratory Panel	202
	X	**MC1**	Microbiology Combination with GC	176
	X	**MC2**	Microbiology Combination	176
	X	**MC4**	Urine Colony Count Combination	177
	X	**MC5**	Throat Culture/Rapid Strep	177
		MBT	Microbiology Bench Tools Competency	174
		MRS	Methicillin-resistant *Staphylococcus aureus* Screen	183
		MRS2M	MRSA Screen Molecular, 2 Challenge	183
	X	**MRS5**	Methicillin-resistant *Staphylococcus aureus* Screen	183
	X	**MRS5M**	MRSA Screen, Molecular, 5 Challenge	183
Bacterial strain typing		BSTS	Bacterial Strain Typing-*Staphylococcus*	179
Bacterial vaginosis screen		BV	Bacterial Vaginosis	185
		MVP	Molecular Vaginal Panel	186
		VS2	Vaginitis Screen, Virtual Gram Stain	186
Barbiturate group		DMPM	Drug Monitoring for Pain Management	107

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Barbiturate group (cont.)		SDS	Serum Drug Screen	101
		T	Toxicology	96
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
BCR/ABL1 p190		MHO2, MHO3	Molecular Hematologic Oncology	260
		MRD1	Minimal Residual Disease	260
BCR/ABL1 p210		MHO2, MHO3	Molecular Hematologic Oncology	260
		MRD	Minimal Residual Disease	260
Bence Jones protein		UBJP	Urinary Bence Jones Protein	76
Benzodiazepine group		DMPM	Drug Monitoring for Pain Management	107
		OFD	Oral Fluid for Drugs of Abuse	100
		SDS	Serum Drug Screen	101
		T	Toxicology	96
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
Benzoylecgonine		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
		UTCO	Urine Toxicology Carryover	133
Beta-2-glycoprotein I		ACL, APS	Antiphospholipid Antibody	209
Beta-2-microglobulin, serum	X	TM/TMX	Tumor Markers	89
Beta-2-microglobulin, urine		CD	Cadmium	102
Beta-hydroxybutyrate	X	KET	Ketones	64
Beta globulin		SPE	Serum Electrophoresis	76
Beta-thalassemia		HGM	Hemoglobinopathies, Molecular Methods	245
Bile crystal identification		BCR	Bile Crystals	149
Bilirubin, confirmatory urine		DSC	Dipstick Confirmatory	149
Bilirubin, direct	X	C1, C3, C3X, C4, CZ, CZ2X, CZX	Chemistry and TDM	56–58
Bilirubin, direct (cont.)		CZQ	Quality Cross Check, Chemistry and TDM	41
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
	X	NB, NB2	Neonatal Bilirubin	65
Bilirubin, total	X	**C1, C3, C3X, C4, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FLD2	Body Fluid Chemistry 2	73
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
	X	**NB,** NB2	Neonatal Bilirubin	65
Bilirubin, urine	X	CMP, CMP1	Clinical Microscopy	146
		CMQ	Quality Cross Check, Urinalysis	46
		DSC	Dipstick Confirmatory	149
	X	HCC2	Waived Combination	66
		POC3	POC Urine Dipstick Competency	52
Bioavailable testosterone		DY	Ligand Assay, Special	84
Biochemical genetics		BGL, BGL1	Biochemical Genetics	243
Bioterrorism agents		LPX	Laboratory Preparedness Exercise	184
BK virus		ID1T	Nucleic Acid Amp, JC and BK	197
		VLS, VLS2	Viral Load	199
Blood cannabinoids		THCB	Blood Cannabinoids	105
Blood cell identification	X	**BCP, BCP2**	Blood Cell Identification	140
		EHE1	Expanded Virtual Peripheral Blood Smear	144
	X	**FH1-FH4, FH6, FH9, FH10, FH13, FH14, FH1P-FH4P, FH6P, FH9P, FH10P, FH13P, FH14P**	Hematology Automated Differential	136–137
	X	**HEP**	Basic Hematology	136
		VPBS	Virtual Peripheral Blood Smear	144
		VBF	Virtual Body Fluid	148
Blood culture	X	BCS	Blood Culture	179

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Blood culture (cont.)		GNBC	Gram-Negative Blood Culture Panel	180
		GPBC	Gram-Positive Blood Culture Panel	180
Blood culture *Staphylococcus aureus*		BCS1	Blood Culture *Staphylococcus aureus*	180
Blood parasite	X	**BP**	Blood Parasite	193
	X	**P**	Parasitology	192
Blood parasite, rapid		RMAL	Rapid Malaria	193
Bloom syndrome	X	MGL4	Molecular Genetics	246–247
Bocavirus		IDR	Infectious Disease Respiratory Panel	202
Body fluid case studies		VBF	Virtual Body Fluid	148
Body fluid (cell count)		ABF1, ABF2, ABF3	Automated Body Fluid	148
Body fluid (cell count)	X	HFC, HFCI	Hemocytometer Fluid Count	150–151
Body fluid cell identification		CMP/CMP1	Clinical Microscopy	146
Body fluid (chemistry)		FLD, FLD2	Body Fluid	72–73
Body fluid crystal identification		BFC	Crystals	149
Body fluid photographs		CMP, CMP1	Clinical Microscopy	146
Bone marrow cell differential		BMD	Bone Marrow Cell Differential	140
Bone marrow cell identification		BMD	Bone Marrow Cell Differential	140
Bone specific alkaline phosphatase		BMV2	Bone Markers and Vitamins	86
Bordetella holmesii	X	**IDR**	Nucleic Acid Amp, Organisms	202
Bordetella parapertussis		BOR	*Bordetella pertussis/ parapertussis*, Molecular	181
		IDN, IDO	Nucleic Acid Amp, Organisms	201
	X	**IDR**	Infectious Disease Respiratory Panel	202
Bordetella pertussis		BOR	*Bordetella pertussis/ parapertussis*, Molecular	181
		IDN, IDO	Nucleic Acid Amp, Organisms	201
	X	**IDR**	Infectious Disease Respiratory Panel	202
Borrelia burgdorferi		TTD	Antibody Detection of Tick-Transmitted Diseases	204
BRAF	X	BRAF	Mutation Testing	258
	X	MTP	Multigene Tumor Panel	259
BRAF V600E		BRAFV	BRAF V600E	272
BRCA1/2	X	MGL3	Molecular Genetics	246–247
BRCA1/2 sequencing	X	BRCA	*BRCA1/2* Sequencing	244
BRCA1/2 duplication/ deletion analysis		BRCA	*BRCA1/2* Sequencing	244
Brain tissue by FISH		CYJ	Fluorescence In Situ Hybrid, Brain/Glioma Tissue	241
Brightfield in situ hybridization	X	ISH2	In Situ Hybridization	256
Brompheniramine		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Buprenorphine		DMPM	Drug Monitoring for Pain Management	107
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
Bupropion		T	Toxicology	96
		UT	Urine Toxicology	96
Butalbital		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UT	Urine Toxicology	96
***C. difficile* antigen**		CDF2	*Clostridium difficile* Detection	181
	X	**CDF5**	*Clostridium difficile* Detection	182
	X	**D**	Bacteriology, Antigen Detection	173
		SP, SPN	Stool Pathogens-Rapid and Molecular	184
C. difficile toxin		CDF2	*Clostridum difficile* Detection	181
		CDF5	*Clostridum difficile* Detection	182
		D	Bacteriology-Antigen Detection	173
		GIP	Gastrointestinal Panel	203
		GIP5	Gastrointestinal Panel	203
		SP, SPN	Stool Pathogens-Rapid and Molecular	184
CA 15-3		LN34	Tumor Markers Cal Ver/ Lin	128
	X	TM/TMX	Tumor Markers	89

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
CA 19-9		FLD	Body Fluid	72
		FLDQ	Quality Cross Check, Body Fluid Chemistry	42
		LN34	Tumor Markers Cal Ver/Lin	128
	X	TM/TMX	Tumor Markers	89
CA 27.29	X	TM/TMX	Tumor Markers	89
CA 72-4		TM/TMX	Tumor Markers	89
CA 125		LN34	Tumor Markers Cal Ver/Lin	128
	X	TM/TMX	Tumor Markers	89
Cadmium, urine	X	CD	Cadmium	102
Cadmium, whole blood	X	CD	Cadmium	102
Caffeine	X	CZ2X, CZX, CZ, Z	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
Calcitonin	X	TM/TMX	Tumor Markers	89
Calcium		ABS	Accuracy-Based Testosterone and Estradiol	113
	X	**C1, C3, C3X, C4, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FLD2	Body Fluid Chemistry 2	73
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Calcium, urine		ABU	Accuracy-Based Urine	113
		LN6	Urine Chemistry Cal Ver/Lin	122
	X	U	Urine Chemistry, General	68
Calcium, ionized	X	AQ, AQ2, AQ3, AQ4	Aqueous Blood Gas	92
		AQQ, AQ2Q, AQ3Q, AQ4Q	Quality Cross Check, Critical Care Aqueous Blood Gas Series	44
	X	C3, C3X, CZ, CZ2X, CZX	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		LN13C	Blood Gas Cal Ver/Lin	124–125
		POC10, POC11	POC Competency Blood Gases	53
Calcofluor white		FSM	Fungal Smear	191
Campylobacter		CAMP	*Campylobacter*	181
Campylobacter (cont.)		GIP	Gastrointestinal Panel	203
	X	**GIP5**	Gastrointestinal Panel	203
Canavan disease	X	MGL4	Molecular Genetics	246–247
***Candida* culture**	X	**F3**	*Candida* Culture	190
Candida glabrata vaginal, molecular		MVP	Molecular Vaginal Panel	186
Candida krusei vaginal, molecular		MVP	Molecular Vaginal Panel	186
***Candida* sp.**, DNA probe	X	**VS**	Vaginitis Screen	185
Candida sp. group, vaginal, molecular		MVP	Molecular Vaginal Panel	186
Cannabinoids			See Delta-9-THC-COOH and Delta-9-THC	100
Carbamazepine	X	**CZ, CZ2X, CZX, Z**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		LN3	TDM Cal Ver/Lin	121
		T	Toxicology	96
		UT	Urine Toxicology	96
Carbamazepine-10,11-epoxide		T	Toxicology	96
		UT	Urine Toxicology	96
Carbamazepine, free	X	CZ, CZ2X, CZX, Z	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
Carbapenem-resistant organisms		CRO	Carbapenem-resistant Organisms	181
Carboxyhemoglobin	X	SO	Blood Oximetry	94
		SOQ	Quality Cross Check, Blood Oximetry	44
Cardiomyopathy sequencing panel		CMSP	Cardiomyopathy Sequencing Panel	244
Carisoprodol		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Carnitine	X	BGL1	Biochemical Genetics	243
Casts, urine, semiquantitative		UAA, UAA1	Automated Urinalysis	149
CD1a		RFAV1	Rare Flow Antigen Validation CD1a	216
CD3	X	FL, FL1	Lymphocyte Subset Immunophenotyping	213
		LN22	Flow Cytometry Cal Ver/Lin	126
		SCP	Stem Cell Processing	225

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
CD4	X	FL, FL1	Lymphocyte Subset Immunophenotyping	213
		LN22	Flow Cytometry Cal Ver/Lin	126
CD8	X	FL, FL1	Lymphocyte Subset Immunophenotyping	213
		LN22	Flow Cytometry Cal Ver/Lin	126
CD20		PM3	Immunohistochemistry	273
CD30		CD30	CD30 Immunohistochemistry	273
CD34		CBT	Cord Blood Testing	225
	X	FL4	Flow Cytometry CD34+	213
		SCP	Stem Cell Processing	225
CD45		CBT	Cord Blood Testing	225
	X	FL, FL1	Lymphocyte Subset Immunophenotyping	213
		FL4	Flow Cytometry CD34+	213
		SCP	Stem Cell Processing	225
CD49d		ZAP70	ZAP-70 Analysis by Flow Cytometry	216
CD103		RFAV2	Rare Flow Antigen Validation, CD103	216
CD117 (c-kit)		PM1	Immunohistochemistry	273
CEA		FLD	Body Fluid	72
		FLDQ	Quality Cross Check, Body Fluid Chemistry	42
	X	K, KK, K2	Ligand Assay, General	82
		LN5	Ligand Assay Cal Ver/Lin	121–122
		LN5S	Ligand Assay, Siemens Cal Ver/Lin	121–122
Cell free DNA		CFDNA	Cell Free DNA	258
		NIPT	Noninvasive Prenatal Testing	87
Ceruloplasmin	X	S2, S4	Immunology, Special	207
CFU-GM		SCP	Stem Cell Processing	225
CH50		CH50	Total Hemolytic Complement	212
CH100		CH50	CH100	212
Chlamydia trachomatis	X	**HC1**	*C. trachomatis* by DFA	182
	X	**HC3**	*C. trachomatis* by EIA	182
	X	**HC6, HC6X**	*C. trachomatis*/GC by Nucleic Acid Amp	186
	X	**HC7**	*C. trachomatis*/GC DNA by NAA	186
		VR1	Virology Culture	196
Chlamydophila pneumoniae		IDN, IDO	Nucleic Acid Amp, Organisms	201
	X	**IDR**	Infectious Disease, Respiratory Panel	202
Chlordiazepoxide		T	Toxicology	96
		UT	Urine Toxicology	96

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Chloride	X	**AQ, AQ2, AQ3, AQ4**	Aqueous Blood Gas	92
		AQQ, AQ2Q, AQ3Q, AQ4Q	Quality Cross Check, Critical Care Aqueous Blood Gas Series	44
	X	**C1, C3, C3X, C4, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FLD2	Body Fluid Chemistry 2	73
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
		LN13C	Blood Gas Cal Ver/Lin	124–125
		POC10, POC11	POC Competency Blood Gases	53
Chloride, sweat	X	SW1, SW2, SW3, SW4	Sweat Analysis Series	79
Chloride, urine		LN6	Urine Chemistry Cal Ver/Lin	122
	X	U	Urine Chemistry, General	68
Chloride, vitreous fluid		VF	Vitreous Fluid, Post-mortem	101
Chlorpheniramine		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Cholesterol		ABL	Accuracy-Based Lipids	112
	X	**C1, C3, C3X, C4, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FLD	Body Fluid	72
		FLDQ	Quality Cross Check, Body Fluid Chemistry	42
	X	LCW	Ltd Chem, Waived	65
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Chromium	X	R	Trace Metals	78
Chromium, whole blood		TMWB	Trace Metals, Whole Blood	103

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Chromium, urine		TMU	Trace Metals, Urine	103
Chromosomal abnormalities	X	CY, CYBK	Cytogenetics	240
Citalopram		DFC	Drug-Facilitated Crime	108
		T	Toxicology	96
		UT	Urine Toxicology	96
Citrate		KSA	Kidney Stone Risk Assessment	69
CK isoenzymes	X	**CRTI**	Cardiac Markers	62
CK-MB (immunochemical)	X	**CRT, CRTI**	Cardiac Markers	62
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
	X	**PCARI, PCARM, PCARMX**	Plasma Cardiac Markers	65
		POC12	Competency Plasma Cardiac Markers	53
CK2 (MB)		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Clinical pathology improvement program		CPIP/CPIP1	Quality Management, Education	14
Clomipramine		T	Toxicology	96
		UT	Urine Toxicology	96
Clonazepam		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Clonidine		DFC	Drug-Facilitated Crime	108
***Clostidium difficile* antigen**		CDF2	*C. diff,* 2 Challenge	181
	X	**CDF5**	*C. diff,* 5 Challenge	182
	X	**D**	Bacteriology-Antigen Detection	173
		SP, SPN	Stool Pathogens-Rapid and Molecular	184
Clostridium difficile toxin		CDF2	*Clostridum difficile* Detection	181
		CDF5	*Clostridum difficile* Detection	182
		D	Bacteriology-Antigen Detection	173

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Clostridium difficile toxin (cont.)		GIP	Gastrointestinal Panel	203
		GIP5	Gastrointestinal Panel	203
		SP, SPN	Stool Pathogens-Rapid and Molecular	184
Clozapine		T	Toxicology	96
		UT	Urine Toxicology	96
		ZE	Therapeutic Drug Monitoring, Extended	60
CMV		ID1	Nucleic Acid Amp, Viruses	197
		LN38	CMV Viral Load Cal Ver/Lin	129
		VLS, VLS2	Viral Load	199
	X	VM3	Viral Markers-Series 3	228
	X	**VR1**	Virology Culture	196
	X	**VR2**	Viral Antigen Detection by DFA	196
	X	VR3	Infectious Disease Serology	204
CO_2	X	C3, C3X, C4, CZ, CZ2X, CZX	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Cobalt		TMU	Trace Metals, Urine	103
Cobalt, whole blood		TMWB	Trace Metals, Whole Blood	103
Cocaethylene		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Cocaine		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
Codeine		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Codeine (cont.)		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UT	Urine Toxicology	96
Compatibility testing	X	**J, JAT**	Transfusion Medicine	218–219
		JATE1	Transfusion Medicine, Automated, Educational	219
		TMCA	Transfusion Medicine, Competency Assessment	223
Complement C3	X	**IG/IGX**	Immunology, General	206
		LN7	Immunology Cal Ver/Lin	123
Complement C4	X	**IG/IGX**	Immunology, General	206
		LN7	Immunology Cal Ver/Lin	123
Complexed PSA	X	K/KK	Ligand Assay, General	82
Conductivity, sweat	X	SW1, SW2, SW3, SW4	Sweat Analysis Series	79
Connexin 26	X	MGL3	Molecular Genetics	246–247
Copper	X	R	Trace Metals	78
Copper, urine		TMU	Trace Metals, Urine	103
Copper, whole blood		TMWB	Trace Metals, Whole Blood	103
Coproporphyrins	X	N/NX	Urine Chemistry, Special	69
Coronavirus		ID2	Nucleic Acid Amp, Respiratory	198
		IDR	Infectious Disease, Respiratory Panel	202
Cortisol		ABS	Accuracy-Based Testosterone and Estradiol	113
	X	**C1, C3, C3X, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
	X	**K/KK**	Ligand Assay, General	82
		LN5	Ligand Assay Cal Ver/Lin	121–122
		LN5S	Ligand Assay, Siemens Cal Ver/Lin	121–122
Cortisol, salivary		SALC	Salivary Cortisol	77
Cortisol, urinary free	X	N/NX	Urine Chemistry, Special	69
Cotinine		NTA	Nicotine and Tobacco Alkaloids	102
		T	Toxicology	96
		UT	Urine Toxicology	96
C-peptide		ABGIC	Accuracy-Based Glucose, Insulin, and C-Peptide	115

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
C-peptide (cont.)	X	ING	Insulin, Gastrin, C-Peptide, PTH	86
		LN46	C-Peptide/Insulin Cal Ver/Lin	130
C-reactive protein (CRP)	X	CRP, IL	Immunology	206
		LN12, LN12E	C-Reactive Protein Cal Ver/Lin	124
C-reactive protein, high-sensitivity (hsCRP)	X	HSCRP	High-Sensitivity C-Reactive Protein	64
		LN21	High-Sensitivity C-Reactive Protein Cal Ver/Lin	126
Creatine kinase (CK)	X	**C1, C3, C3X, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Creatinine	X	**AQ2, AQ4**	Aqueous Blood Gas	92
		AQ2Q, AQ4Q	Quality Cross Check, Critical Care Aqueous Blood Gas Series	44
	X	**C1, C3, C3X, C4, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FLD	Body Fluid	72
		FLDQ	Quality Cross Check, Body Fluid Chemistry	42
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
		LN24	Creatinine Accuracy Cal Ver/Lin	127
		SCO	Serum Carryover	133
Creatinine, urine		ABU	Accuracy-Based Urine	113
	X	BU	Bone and Mineral, Urine	85
	X	CD	Cadmium	102
		DAI	Urine Drug Adulterant/ Integrity Testing	98
		LN6	Urine Chemistry Cal Ver/Lin	122

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Creatinine, urine (cont.)		LN20	Urine Albumin Cal Ver/Lin	126
	X	U	Urine Chemistry, General	68
		UDC	Forensic Urine Drug Testing, Confirmatory	99
	X	UMC	Urine Albumin/Creatinine	153
Creatinine, vitreous fluid		VF	Vitreous Fluid, Post-mortem	101
Creatinine, whole blood	X	**WBCR**	Whole Blood Creatinine	66
Crossmatching		EXM, EXM2	Electronic Crossmatch	219–220
	X	**J, JAT**	Transfusion Medicine	218–219
	X	MX1B, MX1C, MXB, MXC	HLA Analysis, Class I	234–235
	X	MX2B, MX2C, MXB, MXC	HLA Analysis Class II	234–235
		TMCA	Transfusion Medicine, Competency Assessment	223
Cryptococcal antigen detection	X	**CRYP**	Cryptococcal Antigen Detection	190
		F	Mycology and Aerobic Actinomycetes	189
		F1	Yeast	189
Cryptococcus neoformans/gatti		IDME	Meningitis/Encephalitis Panel	202
Cryptosporidium		GIP	Gastrointestinal Panel	203
		GIP5	Gastrointestinal Panel	203
***Cryptosporidium* immunoassay, preserved specimen**	X	**P, P3, P4, P5**	Parasitology	192
Crystals, urine (semiquantitative)		UAA	Automated Urinalysis	149
Crystal identification (bile)		BCR	Bile crystals	149
Crystal identification (body fluid)		BFC	Body Fluid Crystals	149
Crystal identification (body fluid, urine and bile)		BFC	Body Fluid Crystals	149
Crystal identification (urine)		URC	Urine Crystals	149
CSF antigen detection	X	**D**	Bacteriology	173
C-telopeptide (CTX)		BMV5	Bone Markers and Vitamin	86
		BU	Bone and Mineral, Urine	85
Cyclic citrullinated peptide antibody		CCP	Anti-cyclic Citrullinated Peptide Antibody	210
Cyclobenzaprine		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
Cyclobenzaprine (cont.)		T	Toxicology	96
		UT	Urine Toxicology	96
Cyclospora cayatanensis		GIP	Gastrointestinal Panel	203
		GIP5	Gastrointestinal Panel	203
Cyclosporine	X	CS	Immunosuppressive Drugs	59
		LN31	Immunosuppressive Drugs Cal Ver/Lin	128
CYP2C9		PGX	Pharmacogenetics	249
CYP2C19		PGX	Pharmacogenetics	249
CYP2D6		PGX	Pharmacogenetics	249
CYP3A4		PGX	Pharmacogenetics	249
CYP3A5		PGX	Pharmacogenetics	249
Cystatin C		CYS	Cystatin C	74
Cystic fibrosis	X	MGL2, MGL5	Molecular Genetics	246–247
Cystine		KSA	Kidney Stone Risk Assessment	69
Cytogenomic microarray		CYCGH	Constitutional Microarray Analysis	242
		CYCMA	Cytogenomic Microarray Analysis for Oncologic Abnormality	242
Cytology proficiency testing			See Cytopathology GYN proficiency testing	277
Cytomegalovirus (CMV)		ID1	Nucleic Acid Amp, Viruses	197
		IDME	Meningitis/Encephalitis Panel	202
		LN38	CMV Viral Load Cal Ver/Lin	129
		VLS, VLS2	Viral Load	199
	X	VM3	Viral Markers-Series 3	228
	X	**VR1**	Virology Culture	196
	X	**VR2**	Virology by DFA	196
	X	VR3	Infectious Disease Serology	204
Cytopathology GYN education		PAPCE1	PAP Edu, Conventional	278
		PAPJE1	PAP Edu, All Technologies	278
		PAPKE1	PAP Edu, SurePath	278
		PAPME1	PAP Edu, ThinPrep	278
Cytopathology GYN proficiency testing		**PAPCPT**	PAP PT, Conventional	277
		PAPJPT	PAP PT, Combination	277
		PAPKPT	PAP PT, SurePath	277
		PAPLPT	PAP PT, Combination	277
		PAPMPT	PAP PT, ThinPrep	277
Cytopathology, nongynecologic		FNA/FNA1	Fine-Needle Aspiration-Online	282
		FNAG/FNAG1	Fine-Needle Aspiration-Glass	283

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Cytopathology, nongynecologic (cont.)		NGC/NGC1	Nongynecologic Cytopath Edu Prgm	281
Cytopreparation differential		HFC	Hemocytometer Fluid Count	150
Dabigatran		DBGN	Anticoagulant Monitoring, Dabigatran	163
D-dimer, qualitative		CGDF	Coagulation, D-dimer/ FDP	160
		CGL	Coagulation, Limited	160
D-dimer, quantitative	X	CGDF	Coagulation, D-dimer/ FDP	160
	X	CGL	Coagulation, Limited	160
		CGLQ	Quality Cross Check, Coagulation, Limited	47
		LN42	D-dimer Cal Ver/Lin	130
	X	PCARM, PCARMX	Plasma Cardiac Markers	65
		POC12	Competency Plasma Cardiac Markers	53
Delta-9-THC		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		THCB	Blood Cannabinoids	105
		UT	Urine Toxicology	96
Delta-9-THC-COOH		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		THCB	Blood Cannabinoids	105
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
		UTCO	Urine Toxicology Carryover	133
Deoxypyridinoline (DPD)		BU	Bone and Mineral, Urine	85
Dermatopathology		DPATH/ DPATH1	Online Digital Slide Program	265
Dermatophyte identification	X	**F**	Mycology and Aerobic Actinomycetes	189
Desipramine		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
	X	ZT	TDM, Special	60
Desmethylclomipramine		T	Toxicology	96

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Desmethylclomipramine (cont.)		UT	Urine Toxicology	96
Desmethylcyclobenzaprine		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Desmethylsertraline		T	Toxicology	96
		UT	Urine Toxicology	96
Dextromethorphan		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
DHEA sulfate	X	Y/YY	Ligand Assay, Special	84
DIA (Dimeric inhibin A)	X	FP/FPX	Maternal Screen	87
Diazepam		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UT	Urine Toxicology	96
Differential, automated	X	**FH1-FH4, FH6, FH9, FH10, FH13, FH14, FH1P-FH4P, FH6P, FH9P, FH10P, FH13P, FH14P**	Hematology Automated Differential	136–137
		FH3Q, FH4Q, FH6Q, FH9Q	Quality Cross Check, Automated Hematology Series	45
Differential (fluid), manual		HFC, HFCI	Hemocytometer Fluid Count	150–151
Differential (blood), manual		EHE1	Expanded Virtual Peripheral Blood Smear	144
		VPBS	Virtual Peripheral Blood Smear	144
Differential (bone marrow), manual		BMD	Bone Marrow Cell Differential	140
Digital slide program in fine-needle aspiration, online		FNA/FNA1	Online Digital Slide Program	282
Digoxin	X	**CZ, CZ2X, CZX, Z**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		LN3	TDM Cal Ver/Lin	121
Digoxin, free	X	CZ, CZ2X, CZX, Z	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Dihydrocodeine		T	Toxicology	96
		UT	Urine Toxicology	96
Diltiazem		T	Toxicology	96
		UT	Urine Toxicology	96
Dilute prothrombin time		CGE/CGEX	Coagulation, Extended	161
Dilute Russell's viper venom time		CGS1	Coag Special, Series 1	162–163
Dimeric inhibin A (DIA)	X	FP, FPX	Maternal Screen	87
Diphenhydramine		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Diphenylhydantoin			See Phenytoin	
Direct antiglobulin testing	X	DAT	Direct Antiglobulin Testing	222
		TMCAD	Transfusion Medicine, Competency Assessment	223
Direct bilirubin	X	C1, C3, C3X, C4, CZ, CZ2X, CZX	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
	X	NB, NB2	Neonatal Bilirubin	65
Disease association/ drug risk		DADR1, DADR2	Disease Association/ Drug Risk	237
Disopyramide	X	CZ, CZ2X, CZX, Z	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
DMD/Becker	X	MGL2	Molecular Genetics	246–247
DNA analysis	X	DML	HLA Molecular Typing	235
		MHO	Molecular Oncology	260
	X	PARF	Parentage/Relationship	231
DNA content/cell cycle analysis		FL, FL2	Flow Cytometry	213
DNA extraction and amplification		MHO5	Molecular Oncology Hematologic	257, 260
DNA fingerprinting		IDN, IDO	Nucelic Acid Amp, Organisms	201
DNA mismatch repair		HQMMR	HistoQIP Mismatch Repair IHC	269
		MMR	DNA Mismatch Repair	272
DNA sequencing		SEC, SEC1	DNA Sequencing	248
Dopamine	X	N/NX	Urine Chemistry, Special	69
Doxepin		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Doxylamine		DFC	Drug-Facilitated Crime	108
		T	Toxicology	96
		UT	Urine Toxicology	96
DPYD		PGX3	Pharmacogenetics	249
Duloxetine		T	Toxicology	96
		UT	Urine Toxicology	96
Ecgonine ethyl ester		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Ecgonine methyl ester		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
E. coli O157		GIP	Gastrointestinal Panel	203
EGFR-Epidermal growth factor receptor	X	EGFR	Mutation Testing	258
	X	MTP	Multigene Tumor Panel	259
eGFR		LN24	Creatinine Accuracy CalVer/Lin	127
Electronic crossmatch		EXM, EXM2	Electronic Crossmatch	219–220
Electrophoresis	X	HG	Hemoglobinopathy	141
		LPE	Lipoprotein Electrophoresis	76
	X	M, OLI	CSF Chemistry and Oligoclonal Bands	74
		SPE	Protein Electrophoresis	76
		UBJP	Urinary Bence Jones Proteins	76
Elution, antibody		ELU	Eluate	222
		TMCAE	Eluate Competency Assessment	224
Embryology		EMB	Embryology	157
Enteroaggregative *E. coli* (EAEC)		GIP	Gastrointestinal Panel	203
	X	**GIP5**	Gastrointestinal Panel	203
Enteropathogenic *E. coli* (EPEC)		GIP	Gastrointestinal Panel	203
	X	**GIP5**	Gastrointestinal Panel	203
Enterotoxigenic *E. coli* (ETEC)		GIP	Gastrointestinal Panel	203
	X	**GIP5**	Gastrointestinal Panel	203
Enterovirus		ID1	Nucleic Acid Amp, Viruses	197
		IDME	Meningitis/Encephalitis Panel	202

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Enterovirus (cont.)	X	**IDR**	Infectious Disease, Respiratory Panel	202
	X	**VR1**	Virology Culture	196
Eosinophils, urine		SCM2	Special Clinical Microscopy	152
Ephedrine		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Epidermal growth factor receptor (*EGFR*)	X	EGFR	Mutation Testing	258
	X	MTP	Multigene Tumor Panel	259
Epinephrine		N/NX	Urine Chemistry, Special	69
Epithelial cells, urine, semiquantitative		UAA1	Automated Urinalysis	149
Epstein-Barr virus (EBV)		ID1	Nucleic Acid Amp, Viruses	197
		ISH	In Situ Hybridization	256
		VLS, VLS2	Viral Load	199
		VR3	Antibody Detection-Infectious Disease Serology	204
ER, PgR by immunohistochemistry	X	PM2	ER, PgR by Immunohistochemistry	274
Erythrocyte sedimentation rate		ESR, ESR1, ESR2, ESR3	Erythrocyte Sedimentation Rate	141
Erythropoietin		EPO	Erythropoietin	86
Escherichia coli K1		IDME	Meningitis/Encephalitis Panel	202
***Escherichia coli* O157**		GIP	Gastrointestinal Panel	203
	X	**GIP5**	Gastrointestinal Panel	203
Estradiol		ABS	Accuracy-Based Testosterone and Estradiol	113
		LN8	Reproductive Endocrinology Cal Ver/Lin	123
	X	Y/YY	Ligand Assay, Special	84
Estriol, unconjugated (uE3)	X	FP/FPX	Maternal Screen	87
	X	Y/YY	Ligand Assay, Special	84
Estrogen receptors by immunohistochemistry	X	PM2	ER, PgR by Immunohistochemistry	274
Ethanol	X	**AL1**	Whole Blood Alcohol/Volatiles	101
	X	**AL2**	Serum Alcohol/Volatiles	101
		LN11	Serum Ethanol Cal Ver/Lin	124
Ethanol, urine		UDS, UDS6	Urine Drug Screen	98
Ethanol, vitreous fluid		VF	Vitreous Fluid, Post-mortem	101
Ethosuximide	X	**CZ, CZ2X, CZX, Z**	Chemistry and TDM	56–58

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Ethosuximide (cont.)		CZQ	Quality Cross Check, Chemistry and TDM	41
Ethylene glycol		AL1	Whole Blood Alcohol/Volatiles	101
		AL2	Serum Alcohol/Volatiles	101
Ethyl glucuronide (EtG)		ETB	Ethanol Biomarkers	102
Ethyl sulfate (EtS)		ETB	Ethanol Biomarkers	102
Everolimus		EV	Everolimus	60
Factor II		CGE/CGEX	Coagulation, Extended	161
Factor II mutation	X	TPM	Thrombophilia Mutations	250
	X	MGL1	Molecular Genetics	246–247
Factor V		CGE/CGEX	Coagulation, Extended	161
Factor V Leiden mutation	X	MGL1	Molecular Genetics	246–247
	X	TPM	Thrombophilia Mutations	250
Factor VII		CGE/CGEX	Coagulation, Extended	161
Factor VIII	X	CGE/CGEX	Coagulation, Extended	161
	X	CGS3	Coag Special, Series 3	162–163
Factor VIII inhibitor		CGS3	Coag Special, Series 3	162–163
Factor IX		CGE/CGEX	Coagulation, Extended	161
Factor X		CGE/CGEX	Coagulation, Extended	161
Factor XI		CGE/CGEX	Coagulation, Extended	161
Factor XII		CGE/CGEX	Coagulation, Extended	161
Factor XIII		CGE/CGEX	Coagulation, Extended	161
Familial dysautonomia	X	MGL4	Molecular Genetics	246–247
Fanconi anemia, complementation grp. C	X	MGL4	Molecular Genetics	246–247
Fecal calprotectin		FCAL	Fecal Calprotectin	75
Fecal fat, qualitative		FCFS	Fecal Fat	75
Fecal lactoferrin		FLAC	Fecal Lactoferrin	182
Fentanyl		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
Fern test (vaginal)	X	CMMP	Clinical Microscopy, Misc	147
Ferritin	X	C3, C3X, CZ, CZ2X, CZX	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
	X	K, KK, K2	Ligand Assay, General	82

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Ferritin (cont.)		LN5	Ligand Assay Cal Ver/Lin	121–122
		LN5S	Ligand Assay, Siemens Cal Ver/Lin	121–122
Fetal fibronectin	X	FF	Fetal Fibronectin	86
Fetal hemoglobin (gastric fluid)		APT	Fetal Hemoglobin	150
Fetal hemoglobin identification	X	HG	Hemoglobinopathy	141
Fetal membrane rupture		ROM1	Rupture of Fetal Membrane	152
Fetal red cell quantitation	X	HBF	Fetal Red Cell Detection	222
		TMCAF	Transfusion Medicine, Competency Assessment	224
Fetal screen (Rosette testing)	X	HBF	Fetal Red Cell Detection	222
		TMCAF	Transfusion Medicine, Competency Assessment	224
Fibrin monomer		CGS3	Coag Special, Series 3	162–163
Fibrinogen	X	**CGL**	Coagulation, Limited	160
		CGLQ	Quality Cross Check, Coagulation, Limited	47
		LN44	Fibrinogen, Cal Ver/Lin	130
Fibrinogen antigen		CGE/CGEX	Coagulation, Extended	161
Fibrinogen degradation products, plasma		CGDF	Coagulation, D-dimer/FDP	160
		CGL	Coagulation, Limited	160
		CGLQ	Quality Cross Check, Coagulation, Limited	47
Fibrinogen degradation products, serum		CGDF	Coagulation, D-dimer/FDP	160
		CGL	Coagulation, Limited	160
		CGLQ	Quality Cross Check, Coagulation, Limited	47
Fine-needle aspiration, digital slide program		FNA/FNA1	Online Digital Slide Program	282
Fine-needle aspiration, glass slides		FNAG/FNAG1	Fine-Needle Aspiration	283
FISH for breast carcinoma hybridization and interpretation on site (*HER2* gene amplification)	X	CYH	Fluorescence In Situ Hybridization, Breast Cancer	241
FISH for brain/glioma		CYJ	Fluorescence In Situ Hybridization, Brain/Glioma Tissue	241
FISH for constitutional and hematologic disorders		CYF	Fluorescence In Situ Hybridization	240
FISH for lymphoma		CYL	Fluorescence In Situ Hybridization, Lymphoma	241
FISH for paraffin-embedded tissue		CYH	Fluorescence In Situ Hybridization, Breast Cancer	241
		CYJ	Fluorescence In Situ Hybridization, Brain/Glioma Tissue	241
		CYK	Fluorescence In Situ Hybridization, Sarcoma Tissue or Pediatric Neoplasm	241
		CYL	Fluorescence In Situ Hybridization, Lymphoma	241
FISH for sarcoma		CYK	Fluorescence In Situ Hybridization, Sarcoma Tissue or Pediatric Neoplasm	241
FISH for urothelial carcinoma hybridization and interpretation on-site	X	CYI	Fluorescence In Situ Hybridization, Urothelial Carcinoma	240
Fluconazole		AFD	Antifungal Drugs Monitoring	106
Flunitrazepam		T	Toxicology	96
		UT	Urine Toxicology	96
Fluorescent microscope check		I	Instrumentation	131
Fluoxetine		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
Flurazepam		FTC	Forensic Toxicology, Criminalistics	104
Folate, RBC	X	FOL	RBC Folate	88
Folate, serum	X	K, KK, K2	Ligand Assay, General	82
		LN5	Ligand Assay Cal Ver/Lin	121–122
		LN5S	Ligand Assay, Siemens Cal Ver/Lin	121–122
Follicle-stimulating hormone (FSH)		ABS	Accuracy-Based Testosterone, Estradiol	113
		LN8	Reproductive Endocrinology Cal Ver/Lin	123
	X	Y/YY	Ligand Assay, Special	84
Fondaparinux		FNPX	Anticoagulant Monitoring, Fondaparinux	163
Forensic pathology		FR/FR1	Forensic Pathology	286
Forensic toxicology		FTC	Forensic Toxicology, Criminalistics	104
Fragile X	X	MGL1	Molecular Genetics	246–247

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Free beta hCG		FP1B	First Trimester Maternal Screening, Free Beta	87
Free testosterone	X	DY	Ligand Assay, Special	84
Friedreich ataxia	X	MGL2	Molecular Genetics	246–247
Fructosamine		FT	Fructosamine	75
Fungal culture		CBT	Cord Blood Testing	225
		SCP	Stem Cell Processing	225
Fungal serology		FSER	Fungal Serology	190
Fungus identification	X	**F**	Mycology and Aerobic Actinomycetes	189
	X	**F1**	Yeast	189
	X	**F3**	*Candida* culture	190
Gabapentin		DMPM	Drug Monitoring for Pain Management	107
		T	Toxicology	96
		UT	Urine Toxicology	96
		ZE	Therapeutic Drug Monitoring, Extended	60
Galactomannan		FGAL	Galactomannan	190
Gamma globulin		M, OL1	CSF Chemistry	74
		SPE	Serum Electrophoresis	76
Gamma glutamyl transferase (GGT)	X	C3, C3X, CZ, CZ2X, CZX	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Gamma hydroxybutyrate		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
***Gardnerella vaginalis*, DNA probe**	X	**VS**	Vaginitis Screen	185
Gastric occult blood		GOCB	Gastric Occult Blood	150
Gastric pH		GOCB	Gastric Occult Blood	150
Gastrin	X	ING	Insulin, Gastrin, C-Peptide, PTH	86
Gaucher disease	X	MGL4	Molecular Genetics	246–247
Genomic copy number array		CYCGH	Constitutional Microarray Analysis	242
Gentamicin	X	**CZ, CZ2X, CZX, Z**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		LN3	TDM Cal Ver/Lin	121
Giardia		GIP	Gastrointestinal Panel	203
		GIP5	Gastrointestinal Panel	203

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
***Giardia* immunoassay, preserved specimen**	X	**P, P3, P4, P5**	Parasitology	192
Giemsa stain	X	**BP**	Blood Parasite	193
	X	**P**	Parasitology	192
Glioma by FISH		CYJ	Fluorescence In Situ Hybridization, Brain/ Glioma Tissue	241
Glucose		ABGIC	Accuracy-Based Glucose, Insulin, and C-Peptide	115
	X	**AQ2, AQ4**	Aqueous Blood Gas	92
		AQ2Q, AQ4Q	Quality Cross Check, Critical Care Aqueous Blood Gas Series	44
	X	**C1, C3, C3X, C4, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FLD	Body Fluid	72
		FLDQ	Quality Cross Check, Body Fluid Chemistry	42
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
		LN13C	Blood Gas Cal Ver/Lin	124–125
Glucose, CSF	X	M, OLI	CSF Chemistry and Oligoclonal Bands	74
Glucose, urine	X	CMP, CMP1	Clinical Microscopy	146
		CMQ	Quality Cross Check, Urinalysis	46
	X	HCC2	Waived Combination	66
		LN6	Urine Chemistry Cal Ver/Lin	122
		POC3	POC Urine Dipstick Competency	52
	X	U	Urine Chemistry, General	68
Glucose, vitreous fluid		VF	Vitreous Fluid, Post-mortem	101
Glucose, whole blood	X	HCC	Waived Combination	66
		HCC2	Waived Combination	66
	X	LCW	Ltd Chem, Waived	65
		LN17	Whole Blood Glucose Cal Ver/Lin	125
		POC2	POC Glucose Competency	52

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Glucose, whole blood (cont.)		POC7	POC/Waived Glucose and Hemoglobin Competency	52
		WBGQ	Quality Cross Check, Whole Blood Glucose	41
Glucose-6-phosphate dehydrogenase (qualitative and quantitative)		G6PDS	Glucose-6 Phosphate Dehydrogenase	75
Glutaraldehyde, urine		DAI	Urine Drug Adulterant/ Integrity Testing	98
Glycated serum albumin		GSA	Glycated Serum Albumin	64
Glycogen storage disease type 1A	X	MGL4	Molecular Genetics	246–247
Glycohemoglobin	X	GH2, GH5, GH5I	Hemoglobin A_{1c}	63–64
		GHQ	Quality Cross Check, Hemoglobin A_{1c}	42
		LN15	Hemoglobin A_{1c} Cal Ver/Lin	125
Glycosaminoglycans (mucopolysaccharides)		BGL	Biochemical Genetics	243
Gram stain	X	**D**	Bacteriology	173
	X	**D2, D3, D7**	Throat, Urine, GC Cultures	175
	X	**D4**	Bacteriology, Ltd	176
	X	**D5**	Gram Stain	177
	X	**MC1**	Microbiology Combination with GC	176
	X	**MC2**	Microbiology Combination	176
	X	**MC5**	Throat Culture/Rapid Strep	177
		VGS1	Virtual Gram Stain Basic	178
		VGS2	Virtual Gram Stain Advanced	178
		VS2	Vaginitis Screen, Virtual Gram stain	186
Group A *Streptococcus* antigen detection	X	**D**	Bacteriology	173
	X	**D4**	Bacteriology, Limited	176
	X	**D6**	Rapid Group A Strep	178
	X	D9	Rapid Group A Strep, Waived	178
	X	**MC1**	Microbiology Combination with GC	176
	X	**MC2**	Microbiology Combination	176
	X	**MC4**	Urine Colony Count Combination	177
	X	**MC5**	Throat Culture/Rapid Strep	177
Group A *Streptococcus* antigen detection (cont.)		POC4	POC Strep Screen Competency	52
Group B *Streptococcus*	X	**D8**	Group B Strep	179
Growth hormone	X	Y/YY	Ligand Assay, Special	84
Gyn cytopathology			See Cytopathology GYN Proficiency Testing	
Gyn cytopathology education			See Cytopathology GYN Education	
Haemophilus influenzae		IDME	Meningitis/Encephalitis Panel	202
Haptoglobin	X	IG/IGX	Immunology, General	206
	X	S2/S4	Immunology, Special	207
HBeAg	X	**VM2**	Viral Markers-Series 2	228
HBsAg	X	**VM1**	Viral Markers-Series 1	228
HBV	X	HBVL, HBVL5	Hepatitis Viral Load	198
	X	NAT	Nucleic Acid Testing	230
HCV	X	HCV2	Hepatitis Viral Load, Genotyping and Qualitative	198
		LN45	HCV Viral Load Cal Ver/ Lin	129
	X	NAT	Nucleic Acid Testing	230
HDL cholesterol		ABL	Accuracy-Based Lipid	112
	X	**C1, C3, C3X, C4, CZ, CZ3X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
	X	LCW	Ltd Chem, Waived	65
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Helicobacter pylori	X	HPS	*H. pylori* Antigen, Stool	182
	X	S2, S4	*H. pylori* IgG Antibody	207
	X	S5	*H. pylori* IgG Antibody	207
	X	VR3	*H. pylori* IgG Antibody	204
Hematocrit	X	**AQ, AQ2, AQ3, AQ4**	Aqueous Blood Gas	92
		AQQ, AQ2Q, AQ3Q, AQ4Q	Quality Cross Check, Critical Care Aqueous Blood Gas Series	44
		CBT	Cord Blood Testing	225
	X	**FH1-FH4, FH6, FH9, FH10, FH13, FH14, FH1P-FH4P, FH6P, FH9P, FH10P, FH13P, FH14P**	Hematology Automated Differential	136–137

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Hematocrit (cont.)		FH3Q, FH4Q, FH6Q, FH9Q	Quality Cross Check, Automated Hematology Series	45
	X	**FH15**	Centrifugal Hematology	137
	X	HCC2	Waived Combination	66
	X	**HE, HEP**	Basic Hematology	136
		POC10, POC11	POC Competency Blood Gases	53
		SCP	Stem Cell Processing	225
	X	**SO**	Blood Oximetry	94
		SOQ	Quality Cross Check, Blood Oximetry	44
Hematology case studies		EHE1	Expanded Virtual Peripheral Blood Smear	144
		BMD	Bone Marrow Cell Differential	140
		VPBS	Virtual Peripheral Blood Smear	144
Hematopathology online education		HPATH, HPATH1	Hematopathology Online Education	145
Hemochromatosis	X	MGL1	Molecular Genetics	246–247
Hemocytometer fluid count	X	HFC, HFCI	Hemocytometer Fluid Count	150–151
Hemoglobin		CBT	Cord Blood Testing	225
	X	**FH1-FH4, FH6, FH9, FH10, FH13, FH14, FH1P-FH4P, FH6P, FH9P, FH10P, FH13P, FH14P**	Hematology Automated Differential	136–137
		FH3Q, FH4Q, FH6Q, FH9Q	Quality Cross Check, Automated Hematology Series	45
	X	**FH15**	Centrifugal Hematology	137
	X	HCC	Waived Combination	66
	X	HCC2	Waived Combination	66
	X	**HE, HEP**	Basic Hematology	136
		LN9	Hematology Cal Ver/Lin	123
		POC7	POC/Waived Glucose and Hemoglobin Competency	52
		SCP	Stem Cell Processing	225
	X	**SO**	Blood Oximetry	94
		SOQ	Quality Cross Check, Blood Oximetry	44
Hemoglobin electrophoresis	X	HG	Hemoglobinopathy	141
Hemoglobin, estimated	X	**AQ, AQ2, AQ3, AQ4**	Aqueous Blood Gas	92
Hemoglobin, estimated (cont.)		AQQ, AQ2Q, AQ3Q, AQ4Q	Quality Cross Check, Critical Care Aqueous Blood Gas Series	44
		POC10, POC11	POC Competency Blood Gases	53
Hemoglobin, plasma		PHG	Plasma Hemoglobin	76
Hemoglobin, urine	X	CMP, CMP1	Clinical Microscopy	146
		CMQ	Quality Cross Check, Urinalysis	46
	X	HCC2	Waived Combination	66
		POC3	POC Urine Dipstick Competency	52
Hemoglobin A_{1c}	X	GH2, GH5, GH5I	Hemoglobin A_{1c}	63–64
		GHQ	Quality Cross Check, Hemoglobin A_{1c}	42
		LN15	Hemoglobin A_{1c} Cal Ver/Lin	125
Hemoglobin A2 quantitation	X	HG	Hemoglobinopathy	141
Hemoglobin F quantitation	X	HG	Hemoglobinopathy	141
Hemoglobin S/C	X	HGM	Hemoglobinopathies Genotyping	245
	X	MGL2	Molecular Genetics	246–247
Hemolytic complement, total		CH50	Total Hemolytic Complement	212
Hemosiderin, urine		SCM1	Special Clinical Microscopy	152
Heparin assay		CGS4	Coag Special, Series 4	162–163
Heparin-induced thrombocytopenia		CGE/CGEX	Coagulation, Extended	161
		CGS5	Coag Special, HIT	162–163
		CGS6	Coagulation Special	162–163
		CGS8	Coag Special, HIT	162–163
Heparin, low molecular weight		LN36	Heparin Cal Ver/Lin	129
Heparin, unfractionated		LN36	Heparin Cal/Ver Lin	129
Heparin/platelet Factor IV		CGS5	Coag Special, HIT	162–163
		CGS6	Coagulation Special	162–163
Hepatitis B virus	X	HBVL, HBVL5	Hepatitis Viral Load	198
Hepatitis C virus	X	HCV2	Hepatitis Viral Load, Genotyping and Qualitative	198
		LN45	HCV Viral Load Cal Ver/Lin	129
HER2, gastric		GHER2	Gastric HER2	274

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
HER2 gene amplification by ISH	X	ISH2	In Situ Hybridization	256
HER2 gene amplification by FISH, hybridization and interpretation on site	X	CYH	Fluorescence In Situ Hybridization, Breast Cancer	241
HER2 by immunohistochemistry	X	HER2	HER2 by Immunohistochemistry	274
HER2 by molecular testing		MTP	Multigene Tumor Panel	259
Herpes simplex virus (HSV)	X	**HC2**	HSV by DFA	197
	X	**HC4**	HSV Culture	197
		ID1	Nucleic Acid Amp, Viruses	197
		IDME	Meningitis/Encephalitis Panel	202
	X	**VR1**	Virology Culture	196
	X	**VR2**	Viral Antigen by DFA	196
	X	VR3	Antibody Detection-Infectious Disease Serology	204
HHV6		ID1	Nucleic Acid Amp, Viruses	197
		IDME	Meningitis/Encephalitis Panel	202
		VLS2	Viral Load	199
HHV8		ID1	Nucleic Acid Amp, Viruses	197
High-sensitivity C-reactive protein	X	HSCRP	hsCRP	64
		LN21	High-Sensitivity C-Reactive Protein Cal Ver/Lin	126
Histotechnology quality improvement		HQIP, HQIPBX, HQBX1, HQBX2, HQBX3, HQBX4, HQIHC, HQMMR, HQNSC, HQWSI	HistoQIP	268–271
HIV	X	HIVG, HV2	HIV Viral Load	199
		LN39	HIV Viral Load Cal Ver/Lin	129
	X	NAT	Nucleic Acid Testing	230
HIV genotyping		HIVG	HIV Viral Genotyping	199
HIV-1 p24 antigen	X	VM3	Viral Markers-Series 3	228
HIV-1 p24 antigen, **Anti HIV 1/2**	X	**VM6, VM6X**	Viral Markers-Series 6	229
HLA-A, -B, -C antibody identification	X	MX1B, MX1C, MX1E, MXB, MXC	HLA Analysis, Class I	234–235

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
HLA-A, -B, -C antibody identification (cont.)	X	MX2B, MX2C, MX2E, MXB, MXC	HLA Analysis, Class II	234–235
HLA-(Class I/II) crossmatching	X	MX1B, MX1C, MX1E, MXB, MXC	HLA Analysis, Class I	234–235
	X	MX2B, MX2C, MX2E, MXB, MXC	HLA Analysis, Class II	234–235
HLA-(Class I/II) antibody screen		MX1B, MX1C, MX1E, MX2B, MX2C, MX2E, MXB, MXC	HLA Analysis, Class I/II	234–235
HLA-B*1502		PGX2	Pharmacogenetics	249
HLA-B27 typing	X	B27	HLA-B27 Typing	235
HLA-B*5701		PGX2	Pharmacogenetics	249
		DADR1	Disease Association, Drug Risk	237
HLA-B*57:01		DADR1	Disease Association, Drug Risk	237
HLA-B*58:01		DADR1	Disease Association, Drug Risk	237
HLA-DQA1*03/DQB1*03:02		DADR2	Disease Association, Drug Risk	237
HLA-DQA1*05/DQB1*02		DADR2	Disease Association, Drug Risk	237
HLA molecular typing	X	DML	HLA Molecular Typing	235
Homocysteine	X	HMS	Homocysteine	64
		LN16	Homocysteine Cal Ver/Lin	125
Homovanillic acid	X	N/NX	Urine Chemistry, Special	69
HPV (cytopathology), high-risk	X	**CHPVD**	Digene Specimen Transport Medium	279
	X	**CHPVJ**	Mixed Medium	279
	X	**CHPVK**	SurePath Preservative Fluid Transport Medium	279
	X	**CHPVM**	ThinPrep PreservCyt Transport Medium	279
		HPV	Digene Hybrid Capture Technology Only	197
		ISH	In Situ Hybridization	256
HSV	X	**HC2**	HSV by DFA	197
	X	**HC4**	HSV Culture	197
		ID1	Nucleic Acid Amp, Viruses	197
	X	**VR1**	Virology Culture	196
	X	**VR2**	Viral Antigen by DFA	196
	X	VR3	Antibody Detection-Infectious Disease Serology	204
Human chorionic gonadotropin (hCG), serum	X	**C1, C3, C3X, C4, CZ, CZ2X, CZX**	Chemistry and TDM	56–58

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Human chorionic gonadotropin (hCG), serum (cont.)		CZQ	Quality Cross Check, Chemistry and TDM	41
	X	**FP/FPX, FP1T**	Maternal Screen	87
	X	**HCG, IL**	Immunology	206
	X	**K/KK**	Ligand Assay, General	82
		LN5	Ligand Assay Cal Ver/Lin	121–122
		LN5S	Ligand Assay, Siemens Cal Ver/Lin	121–122
		LN8	Reproductive Endocrinology Cal Ver/Lin	123
		SCO	Serum Carryover	133
Human chorionic gonadotropin (hCG), urine (qualitatitve)	X	CMP, CMP1	Clinical Microscopy	146
		CMQ	Quality Cross Check, Urinalysis	46
	X	HCC2	Waived Combination	66
		POC1	POC hCG Competency	52
		POC3	POC Urine Dipstick Competency	52
	X	UHCG	Urine HCG	152
Human epididymis protein 4		HUEP	Human Epididymis Protein 4	89
Human herpesvirus 6		ID1	Nucleic Acid Amp, Viruses	197
		IDME	Meningitis/Encephalitis Panel	202
		VLS2	Viral Load	199
Human herpesvirus 8		ID1	Nucleic Acid Amp, Viruses	197
Human immuno-deficiency virus (HIV)	X	HIVG, HV2	HIV Viral Load	199
		HIVG	HIV Genotyping	199
		LN39	HIV Viral Load Cal Ver/Lin	129
Human metapneumovirus		ID2	Nucleic Acid Amp, Respiratory	198
	X	**IDR**	Infectious Disease, Respiratory Panel	202
Human papillomavirus (cytology) high-risk	X	**CHPVD**	Digene Specimen Transport Medium	279
	X	**CHPVJ**	Mixed Medium	279
	X	**CHPVK**	SurePath Preservative Fluid Transport Medium	279
	X	**CHPVM**	ThinPrep PreservCyt Transport Medium	279
		HPV	Digene Hybrid Capture Technology Only	197
		ISH	In Situ Hybridization	256

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Human papillomavirus (cytology) high-risk genotyping		CHPVJ	Mixed Medium	279
		CHPVM	ThinPrep PreservCyt Transport Medium	279
Human parechovirus		IDME	Meningitis/Encephalitis Panel	202
Huntington disease	X	MGL2	Molecular Genetics	246–247
Hydrocodone		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UT	Urine Toxicology	96
Hydromorphone		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UT	Urine Toxicology	96
Hydroxybupropion		T	Toxicology	96
Hydroxyzine		T	Toxicology	96
		UT	Urine Toxicology	96
Ibuprofen		T	Toxicology	96
		UT	Urine Toxicology	96
IDH1		GLI	Glioma	259
IDH2		GLI	Glioma	259
IgA	X	**IG/IGX**	Immunology, General	206
		LN7	Immunology Cal Ver/Lin	123
IgA, electrophoresis	X	SPE	Protein Electrophoresis	76
IgD		S2, S4	Immunology, Special	207
IgE	X	**IG/IGX**	Immunology, General	206
	X	**K/KK**	Ligand Assay, General	82
	X	**SE**	Diagnostic Allergy	211
IgE allergen-specific, quantitative		SE	Diagnostic Allergy	211
IgE multi-allergen screen	X	SE	Diagnostic Allergy	211
IGF-1 (somatomedin C)	X	BGS	Bone and Growth	85
	X	Y/YY	Ligand Assay, Special	84
IgG	X	**IG/IGX**	Immunology, General	206
		LN7	Immunology Cal Ver/Lin	123

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
IgG (cont.)		S2, S4	Immunology, Special	207
IgG, electrophoresis	X	SPE	Protein Electrophoresis	76
IgG, CSF	X	M, OLI	CSF Chemistry and Oligoclonal Bands	74
IgG subclass proteins		S2, S4	Immunology, Special	207
IGHV		IGHV	Mutation Analysis	256
IgM	X	**IG/IGX**	Immunology, General	206
		LN7	Immunology Cal Ver/Lin	123
IgM, electrophoresis	X	SPE	Protein Electrophoresis	76
IL-2		CTKN	Cytokines	210
IL-6		CTKN	Cytokines	210
IL-8		CTKN	Cytokines	210
IL-10		CTKN	Cytokines	210
IL28B		PGX1	Pharmacogenetics	249
Imipramine		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
	X	ZT	TDM, Special	60
Immature granulocyte parameter		FH9, FH9P	Hematology, Auto Diff	136
Immunohistochemistry		BRAFV	BRAF V600E	272
		CD30	CD30 Immunohistochemistry	273
		GHER2	Gastric HER2	274
	X	HER2	HER2 by Immunohistochemistry	274
		MK	Immunohistochemistry	272
		MMR	DNA Mismatch Repair	272
		PDL1	PDL1	272
		PM1	CD117 by Immunohistochemistry	273
	X	PM2	ER, PR by Immunohistochemistry	274
		PM3	CD20 by Immunohistochemistry	273
		PM5	Immunohistochemistry TMA	273
		PM6	Anaplastic Lymphoma Kinase IHC	273
India ink		IND	India Ink	191
Infectious mononucleosis (IM)	X	**IL, IM**	Immunology	206
	X	IMW	Infectious Mononucleosis, Waived	207
Influenza virus		ID2	Nucleic Acid Amp, Resp	198
	X	**ID3**	Influenza A, Influenza B, RSV by NAA	198
	X	**IDR**	Infectious Disease, Respiratory Panel	202
		POC8	POC Influenza A/B Ag	52

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Influenza virus (cont.)	X	**VR1**	Virology Culture	196
	X	**VR2**	Viral Antigen Detection by DFA	196
	X	**VR4**	Viral Antigen Detection by EIA and Latex	196
Inherited cancer sequencing panel		ICSP	Inherited Cancer Sequencing Panel	245
In situ hybridization	X	ISH	In Situ Hybridization	256
	X	ISH2	In Situ Hybridization HER2	256
Instrument function		I	Instrumentation	131
Instrument linearity		I	Instrumentation	131
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
		LN3	TDM Cal Ver/Lin	121
		LN5	Ligand Assay Cal Ver/Lin	121–122
		LN5S	Ligand Assay, Siemens Cal Ver/Lin	121–122
		LN6	Urine Chemistry Cal Ver/Lin	122
		LN7	Immunology Cal Ver/Lin	123
		LN8	Reproductive Endocrinology Cal Ver/Lin	123
		LN9	Hematology Cal Ver/Lin	123
		LN11	Serum Ethanol Cal Ver/Lin	124
		LN12, LN12E	C-Reactive Protein Cal Ver/Lin	124
		LN13	Blood Gas Cal Ver/Lin	124–125
		LN13C	Blood Gas Cal Ver/Lin	124–125
		LN15	Hemoglobin A_{1c} Cal Ver/Lin	125
		LN16	Homocysteine Cal Ver/Lin	125
		LN17	Whole Blood Glucose Cal Ver/Lin	125
		LN18, LN19	Reticulocyte Cal Ver/Lin	126
		LN20	Urine Albumin Cal Ver/Lin	126
		LN21	High-Sensitivity C-Reactive Protein Cal Ver/Lin	126
		LN22	Flow Cytometry Cal Ver/Lin	126
		LN23	PSA Cal Ver/Lin	127

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Instrument linearity (cont.)		LN24	Creatinine Accuracy Cal Ver/Lin	127
		LN25	Troponin I Cal Ver/Lin	127
		LN27	Troponin T Cal Ver/Lin	127
		LN30	BNP Cal Ver/Lin	127
		LN31	Immunosuppressive Drugs Cal Ver/Lin	128
		LN32	Ammonia Cal Ver/Lin	128
		LN33	Serum Myoglobin Cal Ver/Lin	128
		LN34	Tumor Markers Cal Ver/Lin	128
		LN35	Thrombophilia Cal Ver/Lin	129
		LN36	Heparin Cal Ver/Lin	129
		LN37	von Willebrand Factor Ag Cal Ver/Lin	129
		LN38	CMV Viral Load Cal Ver/Lin	129
		LN39	HIV Viral Load Cal Ver/Lin	129
		LN40	Vitamin D Cal Ver/Lin	129
		LN41	Procalcitonin Cal Ver/Lin	130
		LN42	D-Dimer Cal Ver/Lin	130
		LN43	Lamellar Body Count Cal Ver/Lin	130
		LN44	Fibrinogen Cal Ver/Lin	130
		LN45	HCV Viral Load Cal Ver/Lin	129
		LN46	C-Peptide/Insulin Cal Ver/Lin	130
Insulin		ABGIC	Accuracy-Based Glucose, Insulin, and C-Peptide	115
	X	ING	Insulin, Gastrin, C-Peptide, PTH	86
		LN46	C-Peptide/Insulin Cal Ver/Lin	130
Interferon (IFN) gamma		CTKN	Cytokines	210
Interleukin (IL)-1 beta		CTKN	Cytokines	210
International normalized ratio (INR)	X	CGB	Basic Coagulation	160
	X	CGL	Coagulation, Limited	160
		CGLQ	Quality Cross Check, Coagulation, Limited	47
		CGS1	Coag Special, Series 1	162–163
		CGS4	Coag Special, Series 4	162–163
		POC6	POC PT/INR, CoaguChek XS Plus	52

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
International normalized ratio (INR) (cont.)	X	WP3, WP4, WP6, WP9	Whole Blood Coagulation	168
		WP10	Whole Blood Coagulation	168
Ionized calcium	X	AQ, AQ2, AQ3, AQ4	Aqueous Blood Gas	92
		AQQ, AQ2Q, AQ3Q, AQ4Q	Quality Cross Check, Critical Care Aqueous Blood Gas Series	44
	X	C3, CZ, CZX	Chemistry and TDM	56–58
		POC10, POC11	POC Competency Blood Gases	53
Iron	X	**C1, C3, C3X, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Isopropanol	X	AL1	Whole Blood Alcohol/Volatiles	101
	X	AL2	Serum Alcohol/Volatiles	101
Itraconazole		AFD	Antifungal Drugs Monitoring	106
JC virus		ID1T	Nucleic Acid Amp, JC and BK	197
Jo-1 (antihistidyl t-RNA synthetase)		RDS	Rheumatic Disease Special	211
Kaolin-activated CT		CGE/CGEX	Coagluation, Extended	161
Kappa/Lambda	X	ISH	In Situ Hybridization	256
Kappa/Lambda ratio		IG/IGX	Immunology, General	206
		S2, S4	Immunology, Special	207
Free Kappa/Lambda ratio		SFLC	Serum Free Light Chains	212
Karyotype nomenclature	X	CY, CYBK	Cytogenetics	240
Ketamine		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Ketones, serum		KET	Ketones	64
Ketones, urine	X	CMP, CMP1	Clinical Microscopy	146
		CMQ	Quality Cross Check, Urinalysis	46
	X	HCC2	Waived Combination	66
		POC3	POC Urine Dipstick Competency	52
Kidney stone assessment		KSA	Kidney Stone Assessment	69

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
KIT		KIT	KIT/PDGFRA	258
		MTP	Multigene Tumor Panel	259
KOH prep (skin or vaginal)	X	CMMP	Clinical Microscopy, Misc	147
	X	FSM	Fungal Smear	191
KRAS	X	KRAS	Colorectal Cancer Mutation	258
	X	MTP	Multigene Tumor Panel	259
Laboratory preparedness exercise		LPX	Laboratory Preparedness Exercise	184
Lacosamide		ZE	Therapeutic Drug Monitoring, Extended	60
Lactate	X	AQ, AQ2, AQ3, AQ4	Aqueous Blood Gas	92
		AQQ, AQ2Q, AQ3Q, AQ4Q	Quality Cross Check, Critical Care Aqueous Blood Gas Series	44
	X	C3, C3X, CZ, CZ2X, CZX	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FLD	Body Fluid	72
		FLDQ	Quality Cross Check, Body Fluid Chemistry	42
		POC10, POC11	POC Competency Blood Gases	53
		LN13C	Blood Gas Cal Ver/Lin	124–125
Lactate, CSF	X	M, OLI	CSF Chemistry and Oligoclonal Bands	74
Lactate dehydrogenase (LD)	X	**C1, C3, C3X, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FLD	Body Fluid	72
		FLDQ	Quality Cross Check, Body Fluid Chemistry	42
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
		SCO	Serum Carryover	133
Lactate dehydrogenase (LD), CSF	X	M, OLI	CSF Chemistry and Oligclonal Bands	74
Lamellar body count		LBC	Lamellar Body Count	151
		LN43	Lamellar Body Count Cal Ver/Lin	130
Lamotrigine		T	Toxicology	96
		UT	Urine Toxicology	96
Lamotrigine (cont.)		ZE	Therapeutic Drug Monitoring, Extended	60
Large unclassified cells (LUC)		FH4, FH14, FH4P, FH14P	Hematology, Auto Diff	137
LD isoenzymes	X	**CRTI**	Cardiac Markers	62
LD1/LD2 ratio	X	**CRTI**	Cardiac Markers	62
LDL cholesterol	X	ABL	Accuracy-Based Lipid	112
LDL cholesterol, measured	X	C1, C3, C3X, C4, CZ, CZ2X, CZX	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
LDL cholesterol, waived	X	LCW	Ltd Chem, Waived	65
Lead (blood)	X	**BL**	Blood Lead	102
Lead, urine		TMU	Trace Metals, Urine	103
Legionella		LBAS	*Legionella* Ag	179
Legionella pneumophila		IDN, IDO	Nucleic Acid Amp, Organisms	201
	X	**IDR**	Infectious Disease, Respiratory Panel	202
Leukemia/lymphoma immunophenotype		FL3	Flow Cytometry	213
Leukemia/lymphoma interpretation only		FL5	Flow Cytometry Interpretation Only	214
Leukocyte esterase, urine	X	CMP, CMP1	Clinical Microscopy	146
		CMQ	Quality Cross Check, Urinalysis	46
	X	HCC2	Waived Combination	66
		POC3	POC Urine Dipstick Competency	52
Leukocyte-reduced platelets		TRC	Transfusion-Related Cell Count	222
Leukocyte-reduced RBC		TRC	Transfusion-Related Cell Count	222
Leukocyte, stool, Wright-Giemsa	X	CMMP	Clinical Microscopy, Misc	147
Levetiracetam		T	Toxicology	96
		UT	Urine Toxicology	96
		ZE	Therapeutic Drug Monitoring, Extended	60
Lidocaine	X	CZ, CZ2X, CZX, Z	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		LN3	TDM Cal Ver/Lin	121
		T	Toxicology	96
		UT	Urine Toxicology	96
Lipase	X	C3, C3X, CZ, CZ2X, CZX	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FLD2	Body Fluid Chemistry 2	73
		IFS	Interfering Substances	132

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Lipase (cont.)		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Lipids		ABL	Accuracy-Based Lipid	112
	X	**C1, C3, C3X, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Lipoprotein (a)	X	ABL	Accuracy-Based Lipid	112
	X	C1, C3, C3X, CZ, CZ2X, CZX	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
Lipoprotein-associated phospholipase		PLA	Lp-PLA_2	75
Lipoprotein electrophoresis		LPE	Lipoprotein Electrophoresis	76
Listeria monocytogenes		IDME	Meningitis/Encephalitis Panel	202
Lithium	X	**C1, C3, C3X, CZ, CZ2X, CZX, Z**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		LN3	TDM Cal Ver/Lin	121
Liver-kidney microsomal antibody		LKM	Liver-Kidney Microsomal Antibody	211
Lorazepam		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UT	Urine Toxicology	96
Lorazepam glucuronide		DMPM	Drug Monitoring for Pain Management	107
Lupus anticoagulant (screen, conf)		CGS1	Coag Special, Series 1	162–163
Luteinizing hormone (LH)		ABS	Accuracy-Based Testosterone, Estradiol	113
Luteinizing hormone (LH) (cont.)		LN8	Reproductive Endocrinology Cal Ver/Lin	123
	X	Y/YY	Ligand Assay, Special	84
Lyme disease		TTD	Tick-Transmitted Disease	204
Lymphocyte immunophenotyping	X	FL, FL1	Flow Cytometry	213
Lymphoma by FISH		CYL	Fluorescence In Situ Hybridization, Lymphoma	241
Lysergic acid diethylamide (LSD)		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
Magnesium	X	C1, C3, C3X, CZ, CZ2X, CZX	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Magnesium, ionized	X	AQ, AQ2	Aqueous Blood Gas	92
		AQQ, AQ2Q	Quality Cross Check, Critical Care Aqueous Blood Gas Series	44
		POC10, POC11	POC Competency Blood Gases	53
Magnesium, urine	X	U	Urine Chemistry, General	68
Malaria		RMAL	Rapid Malaria	193
Manganese		R	Trace Metals	78
		TMU	Trace Metals, Urine	103
Manganese, whole blood		TMWB	Trace Metals, Whole Blood	103
MCAD	X	IMD2	MCAD	247
MCH		FH1-FH4, FH6, FH9, FH10, FH13, FH14, FH1P-FH4P, FH6P, FH9P, FH10P, FH13P, FH14P	Hematology Automated Differential	136–137
		FH3Q, FH4Q, FH6Q, FH9Q	Quality Cross Check, Automated Hematology Series	45
		HE, HEP	Basic Hematology	136

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
MCHC		FH1-FH4, FH6, FH9, FH10, FH13, FH14, FH1P-FH4P, FH6P, FH9P, FH10P, FH13P, FH14P	Hematology Automated Differential	136–137
		FH3Q, FH4Q, FH6Q, FH9Q	Quality Cross Check, Automated Hematology Series	45
		HE, HEP	Basic Hematology	136
MCV		FH1-FH4, FH6, FH9, FH10, FH13, FH14, FH1P-FH4P, FH6P, FH9P, FH10P, FH13P, FH14P	Hematology Automated Differential	136–137
		FH3Q, FH4Q, FH6Q, FH9Q	Quality Cross Check, Automated Hematology Series	45
		HE, HEP	Basic Hematology	136
MECP2 deletion/ duplication analysis		RETT	RETT Syndrome Genotyping	249
MECP2 genotyping	X	RETT	RETT Syndrome Genotyping	249
MEN2	X	MGL3	Molecular Genetics	246–247
Meperidine		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Mephedrone		T	Toxicology	96
		UT	Urine Toxicology	96
Meprobamate		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Mercury, urine		TMU	Trace Metals, Urine	103
Mercury, whole blood		TMWB	Trace Metals, Whole Blood	103
Metabolic disease testing		BGL	Biochemical Genetics	243
Metanephrine	X	N/NX	Urine Chemistry, Special	69
Methadone		DFC	Drug-Facilitated Crime	108
Methadone (cont.)		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
Methadone metabolite (EDDP)		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
Methamphetamine		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
Methanol	X	AL1	Whole Blood Alcohol/ Volatiles	101
	X	AL2	Serum Alcohol/Volatiles	101
Methaqualone		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UDS, UDS6	Urine Drug Screen	98
Methemoglobin	X	SO	Blood Oximetry	94
		SOQ	Quality Cross Check, Blood Oximetry	44
Methicillin-resistant *Staphylococcus aureus* (MRSA)		BCS1	Blood Culture *Staphylococcus aureus*	180
		IDN, IDO	Nucleic Acid Amp, Organisms	201
		MRS	Methicillin-resistant *S. aureus*	183
		MRS2M	MRSA Screen, Molecular, 2 Challenge	183

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Methicillin-resistant *Staphylococcus aureus* (MRSA) (cont.)	X	**MRS5**	Methicillin-resistant *S. aureus*	183
	X	**MRS5M**	MRSA Screen, Molecular, 5 Challenge	183
Methotrexate	X	CZ, CZ2X, CZX, Z	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
Methylenedioxy-amphetamine (MDA)		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UT	Urine Toxicology	96
Methylenedioxyethyl-amphetamine (MDEA)		OFD	Oral Fluid for Drugs of Abuse	100
		UDC	Forensic Urine Drug Testing, Confirmatory	99
Methylenedioxymeth-amphetamine (MDMA)		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
Methylenedioxy-pyrovalerone (MDPV)		T	Toxicology	96
		UT	Urine Toxicology	96
Methylenetetra-hydrofolate reductase (MTHFR)	X	MGL1	Molecular Genetics	246–247
Methylmalonic acid		MMA	MMA and Active B12	82
Methylphenidate		T	Toxicology	96
		UT	Urine Toxicology	96
Metoprolol		T	Toxicology	96
		UT	Urine Toxicology	96
MGMT		GLI	Glioma	259
Microalbumin, urine		LN20	Urine AlbuminCal Ver/Lin	126
	X	U	Urine Chemistry	68
Microalbumin, urine (cont.)	X	UMC	Urine Albumin (Microalbumin)/Creatinine	153
Microsatellite instability		MSI	Microsatellite Instability	256
Microtiter plate reader linearity		I	Instrumentation	131
Minimal residual disease		BALL	B-ALL Minimal Residual Disease	214
		MRD	Minimal Residual Disease, *BCR/ABL1* p210	260
		MRD1	Minimal Residual Disease, *BCR/ABL1* p190	260
		MRD2	Minimal Residual Disease, *PML/RARA*	260
Mirtazapine		T	Toxicology	96
		UT	Urine Toxicology	96
Mite identification		TMO	Ticks, Mites, and Other Arthropods	193
Mitochondrial cytopathies	X	IMD3	Mitochondrial Cytopathies	247
Mitochondrial DNA deletion syndromes	X	IMD1	Mitochondrial DNA Deletion Syndromes	247
Mixing studies, PT		CGE/CGEX	Coagulation, Extended	161
Mixing studies, APTT		CGE/CGEX	Coagulation, Extended	161
		CGS1	Coag Special, Series 1	162–163
MLH1 promoter methylation analysis		MSI	Defective DNA Mismatch Repair/Hereditary Nonpolyposis Colorectal Cancer (HNPCC)	256
Modified acid-fast stain	X	P, P3, P4, P5	Parasitology	192
Mold identification	X	**F**	Mycology and Aerobic Actinomycetes	189
Molecular genetics	X	MGL1, MGL2, MGL3, MGL4, MGL5	Molecular Genetics	246–247
Molecular HLA typing	X	DML	HLA Molecular Typing	235
Molecular hematologic oncology		MHO, MHO1, MHO2, MHO3, MHO5	Molecular Hematologic Oncology	257, 260
Molecular typing		IDN, IDO	Nucleic Acid Amp, Organisms	201
Monitoring engraftment	X	ME	Monitoring Engraftment	236
Mononuclear cell count		CBT	Cord Blood Testing	225
		SCP	Stem Cell Processing	225
Morphine		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Morphine (cont.)		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UT	Urine Toxicology	96
M-protein (paraprotein) identification	X	SPE	Protein Electrophoresis	76
MPV		FH1-FH4, FH6, FH9, FH10, FH13, FH14, FH1P-FH4P, FH6P, FH9P, FH10P, FH13P, FH14P	Hematology Automated Differential	136–137
		FH3Q, FH4Q, FH6Q, FH9Q	Quality Cross Check, Automated Hematology Series	45
		HE, HEP	Basic Hematology	136
MRSA		BCS1	Blood Culture *Staphylococcus aureus*	180
		IDN, IDO	Nucleic Acid Amp, Organisms	201
		MRS	Methicillin-resistant *S. aureus*	183
		MRS2M	MRSA Screen, Molecular, 2 Challenge	183
	X	**MRS5**	Methicillin-resistant *S. aureus*	183
	X	**MRS5M**	MRSA Screen, Molecular, 5 Challenge	183
Mucolipidosis IV	X	MGL4	Molecular Genetics	246–247
Mucopolysaccharide (Glycosaminoglycan)	X	BGL	Biochemical Genetics	243
Multiple endocrine neoplasia type 2 (MEN2)	X	MGL3	Molecular Genetics	246–247
Mumps-IgG		VR3M	Virology	204
Mycobacterial culture	X	**E1**	Mycobacteriology, Ltd	188
Mycobacterial identification	X	**E**	Mycobacteriology	188
Mycobacterium tuberculosis		IDO	Nucleic Acid Amp, Organisms	201
Mycobacterium tuberculosis antibody detection		QF	*M. tuberculosis* Infection Detection	211
Mycobacterium tuberculosis identification and resistance detection		MTBR	Molecular MTB Identification and Resistance Detection	188
Mycophenolic acid	X	MPA	Mycophenolic Acid	60
Mycoplasma pneumoniae		IDN, IDO	Nucleic Acid Amp, Organisms	201
Mycoplasma pneumoniae (cont.)	X	**IDR**	Infectious Disease, Respiratory Panel	202
		VR3	Antibody Detection-Infectious Disease Serology	204
Myoglobin	X	CRT, CRTI	Cardiac Markers	62
		LN33	Serum Myoglobin Cal Ver/Lin	128
	X	PCARM, PCARMX	Plasma Cardiac Markers	65
		POC12	Competency Plasma Cardiac Markers	53
Myoglobin, urine		MYG	Myoglobin, Urine	69
Myotonic dystrophy	X	MGL2	Molecular Genetics	246–247
N-acetylprocainamide (NAPA)	X	**CZ, CZ2X, CZX, Z**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		LN3	TDM Cal Ver/Lin	121
N-desmethyltramadol		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Naproxen		T	Toxicology	96
		UT	Urine Toxicology	96
Nasal smears, eosinophil	X	CMMP	Clinical Microscopy, Misc	147
Neisseria gonorrhoeae	X	**D3**	GC Cultures	175
	X	**D4**	Bacteriology, Limited	176
	X	**HC6/HC6X**	*C. trachomatis*/GC by Nucleic Acid Amp	186
	X	**HC7**	*C. trachomatis*/GC DNA by NAA	186
	X	**MC1**	Microbiology Combination with GC	176
Neisseria meningitidis		IDME	Meningitis/Encephalitis Panel	202
Neoplastic cellularity		NEO	Neoplastic Cellularity	257
Neoplastic disorder by FISH		CYF	Fluorescence In Situ Hybridization	240
Neuropathology		NP/NP1	Neuropathology Program	276
Neutral fats		FCFS	Fecal Fat	75
Next-generation sequencing		NGS	Next-Generation Sequencing	252
		NGSB1	NGS Bioinformatics for Illumina Platforms	253
		NGSB2	NGS Bioinformations for Ion Torrent Platforms	253

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Next-generation sequencing (cont.)		NGSBV	NGS Bioinformatics Somatic Validated Materials	255
		NGSE	NGS Undiagnosed Disorders-Exome	254
		NGSST	Next Generation Sequencing, Solid Tumor	252
		NGSHM	Next Generation Sequencing, Hematologic Malignancies	253
Nicotine		NTA	Nicotine and Tobacco Alkaloids	102
		T	Toxicology	96
		UT	Urine Toxicology	96
Niemann-Pick type A/B	X	MGL4	Molecular Genetics	246–247
NIPT		NIPT	Noninvasive Prenatal Testing	87
Nitrite, urine	X	CMP, CMP1	Clinical Microscopy	146
		CMQ	Quality Cross Check, Urinalysis	46
		DAI	Urine Drug Adulterant/ Integrity Testing	98
	X	HCC2	Waived Combination	66
		POC3	POC Urine Dipstick Competency	52
Nitrogen, total, urine		U	Urine Chemistry, General	68
Nongynecologic cytopathology		FNA/FNA1	Fine-Needle Aspiration-Digital	282
		FNAG/FNAG1	Fine-Needle Aspiration-Glass	283
		NGC/NGC1	Nongynecologic Cytopathology Education Program	281
Noninvasive prenatal testing		NIPT	Noninvasive Prenatal Testing	87
Norbuprenorphine		DMPM	Drug Monitoring for Pain Management	107
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UT	Urine Toxicology	96
Norchlordiazepoxide		T	Toxicology	96
		UT	Urine Toxicology	96
Norclomipramine		T	Toxicology	96
		UT	Urine Toxicology	96
Norcodeine		T	Toxicology	96
		UT	Urine Toxicology	96
Norcyclobenzaprine		T	Toxicology	96
Norcyclobenzaprine (cont.)		UT	Urine Toxicology	96
Nordiazepam		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UT	Urine Toxicology	96
Nordoxepin		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Norepinephrine	X	N/NX	Urine Chemistry, Special	69
Norfentanyl		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Norfluoxetine		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Norketamine		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Normeperidine		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		T	Toxicology	96
		UT	Urine Toxicology	96
Normetanephrine	X	N/NX	Urine Chemistry Special	69
Norovirus		GIP	Gastrointestinal Panel	203
	x	**GIP5**	Gastrointestinal Panel	203
		SP1	Stool Pathogens	184
Noroxycodone		DMPM	Drug Monitoring for Pain Management	107
		T	Toxicology	96
		UT	Urine Toxicology	96
Noroxymorphone		DMPM	Drug Monitoring for Pain Management	107
Norpropoxyphene		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Norpropoxyphene (cont.)		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UT	Urine Toxicology	96
Norsertraline		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Nortrimipramine		T	Toxicology	96
		UT	Urine Toxicology	96
Nortriptyline		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
	X	ZT	TDM, Special	60
Norverapamil		T	Toxicology	96
		UT	Urine Toxicology	96
Novel opioids and benzodiazepines		NOB	Novel Opioids and Benzodiazepines	105
NRAS		MTP	Multigene Tumor Panel	259
nRBC		FH3, FH3P, FH9, FH9P, FH13, FH13P	Hematology, Auto Diff	136
NT-pro B-type natriuretic peptides	X	BNP	B-Type Natriuretic Peptides, 2 Chall	61
	X	BNP5	B-Type Natriuretic Peptides, 5 Chall	61
		BNPQ	Quality Cross Check, B-Type Natriuretic Peptides	41
		LN30	BNP Cal Ver/Lin	127
N-telopeptide (NTX)		BMV6	Bone Markers and Vitamin	86
	X	BU	Bone and Mineral, Urine	85
Nucleated cells, total		CBT	Cord Blood Testing	225
		SCP	Stem Cell Processing	225
Nucleated red cells, total		ABF3	Automated Body Fluid	148
		CBT	Cord Blood Testing	225
		SCP	Stem Cell Processing	225
Nucleated red blood cell count		FH3, FH3P, FH9, FH9P, FH13, FH13P, FH14, FH14P	Hematology, Auto Diff	136–137
Nucleic acid amplification		BSTS	Bacterial Strain Typing *Staphylococcus*	179
	X	HBVL, HBVL5, HCV2	Hepatitis Viral Load	198
	X	**HC6/HC6X**	*C. trachomatis*/GC by Nucleic Acid Amp	186
Nucleic acid amplification (cont.)	X	**HC7**	*C. trachomatis*/GC DNA by NAA	186
	X	HIVG, HV2	HIV Viral Load	199
		IDN, IDO	Nucleic Acid Amp, Organisms	201
		ID1, ID1T	Nucleic Acid Amp, Viruses	197
		ID2	Nucleic Acid Amp, Respiratory	198
		ID3	Influenza A, Influenza B, RSV by NAA	198
		MRS2M	MRSA Screen, Molecular, 2 Challenge	183
	X	**MRS5M**	MRSA Screen, Molecular, 5 Challenge	183
		SP, SPN, SP1	Stool Pathogens	184
		VLS, VLS2	Viral Load	199
		VRE	Vancomycin-Resistant *Enterococcus*	187
Nucleic acid testing	X	NAT	Nucleic Acid Testing	230
O-desmethyltramadol		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Occult blood		OCB	Occult Blood	151
		OCBQ	Quality Cross Check, Occult Blood	46
		POC9	POC Fecal Occult Blood	52
Occult blood, gastric		GOCB	Gastric Occult Blood	150
Ocular micrometer check		I	Instrumentation	131
Olanzapine		T	Toxicology	96
		UT	Urine Toxicology	96
Oligoclonal bands		OLI	Oligoclonal Bands	74
Opiate group		DMPM	Drug Monitoring for Pain Management	107
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
		UTCO	Urine Toxicology Carryover	133
Organic acids, urine qualitative	X	BGL	Biochemical Genetics	243
Organic acids, urine quantitative		BGL	Biochemical Genetics	243
Osmolality, measured	X	C3, C3X, CZ, CZ2X, CZX	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		IFS	Interfering Substances	132

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Osmolality, measured (cont.)		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Osmolality, urine	X	CMP, CMP1	Clinical Microscopy	146
		CMQ	Quality Cross Check, Urinalysis	46
		LN6	Urine Chemistry Cal Ver/Lin	122
		POC3	POC Urine Dipstick Competency	52
	X	U	Urine Chemistry, General	68
Osmometer check		I	Instrumentation	131
Osteocalcin		BGS	Bone and Growth	85
Oxalate		KSA	Kidney Stone Risk Assessment	69
Oxazepam		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UT	Urine Toxicology	96
Oxcarbazepine metabolite		ZE	Therapeutic Drug Monitoring, Extended	60
Oxidants, urine		DAI	Urine Drug Adulterant/ Integrity Testing	98
Oxycodone		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
Oxyhemoglobin	X	SO	Blood Oximetry	94
		SOQ	Quality Cross Check, Blood Oximetry	44
Oxymorphone		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
Oxymorphone (cont.)		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UT	Urine Toxicology	96
p16		P16	P16 Immunohistochemistry TMA	273
Pancreatic amylase	X	**C1, C3, C3X, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
PAPP-A		FP1B	First Trimester Maternal Screening, Free Beta	87
		FP1T	First Trimester Maternal Screening, Total hCG	87
Parainfluenza virus		ID2	Nucleic Acid Amp, Respiratory	198
	X	**IDR**	Infectious Disease, Respiratory Panel	202
	X	**VR1**	Virology Culture	196
	X	**VR2**	Viral Antigen Detection by DFA	196
Paraprotein identification	X	SPE	Protein Electrophoresis	76
Parasite identification	X	**BP**	Blood Parasite	193
	X	**P, P3, P4, P5**	Parasitology	192
		PEX	Expanded Parasitology	193
Parathyroid hormone (PTH)	X	ING	Insulin, Gastrin, C-Peptide, PTH	86
		PTHQ	Quality Cross Check, PTH	43
Parentage/relationship testing	X	PARF	Parentage/Relationship	231
Paroxetine		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Parvovirus B19		ID1	Nucleic Acid Amp, Viruses	197
PCO2	X	**AQ, AQ2, AQ3, AQ4**	Aqueous Blood Gas	92
		AQQ, AQ2Q, AQ3Q, AQ4Q	Quality Cross Check, Critical Care Aqueous Blood Gas Series	44
		POC10, POC11	POC Competency Blood Gases	53

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
***PCO2* (cont.)**		LN13, LN13C	Blood Gas Cal Ver/Lin	124–125
PDGFRA		KIT	*KIT/PDGFRA*	258
		MTP	Multigene Tumor Panel	259
PDL1		PDL1	PDL1	272
Pentobarbital		DFC	Drug-Facilitated Crime	108
		T	Toxicology	96
		UT	Urine Toxicology	96
Performance improvement program in surgical pathology		PIP/PIP1, PIPW/PIPW1	Performance Improvement Program in Surgical Pathology	262–263
Peripheral blood smear, virtual		VPBS	Virtual Peripheral Blood Smear	144
pH		AFL	Amniotic Fluid Leakage	148
	X	**AQ, AQ2, AQ3, AQ4**	Aqueous Blood Gas	92
		AQQ, AQ2Q, AQ3Q, AQ4Q	Quality Cross Check, Critical Care Aqueous Blood Gas Series	44
		FLD	Body Fluid	72
		FLDQ	Quality Cross Check, Body Fluid Chemistry	42
		GOCB	Gastric Occult Blood	150
		POC10, POC11	POC Competency Blood Gases	53
		LN13, LN13C	Blood Gas Cal Ver/Lin	124–125
pH, gastric		GOCB	Gastric Occult Blood	150
pH, urine	X	CMP, CMP1	Clinical Microscopy	146
		CMQ	Quality Cross Check, Urinalysis	46
		DAI	Urine Drug Adulterant/ Integrity Testing	98
	X	HCC2	Waived Combination	66
		POC3	POC Urine Dipstick Competency	52
		UDC	Forensic Urine Drug Testing, Confirmatory	99
pH meters		I	Instrumentation	131
Phencyclidine		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
Phenethylamine		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Pheniramine		T	Toxicology	96
		UT	Urine Toxicology	96
Phenobarbital	X	**CZ, CZ2X, CZX, Z**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		LN3	TDM Cal Ver/Lin	121
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UT	Urine Toxicology	96
Phentermine		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Phenylephrine		T	Toxicology	96
		UT	Urine Toxicology	96
Phenytoin	X	**CZ, CZ2X, CZX, Z**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		LN3	TDM Cal Ver/Lin	121
		SCO	Serum Carryover	133
		T	Toxicology	96
		UT	Urine Toxicology	96
Phenytoin, free	X	CZ, CZ2X, CZX, Z	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
Phosphorus	X	C3, C3X, CZ, CZX, CZ2X	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Phosphorus, urine		LN6	Urine Chemistry Cal Ver/Lin	122
	X	U	Urine Chemistry, General	68
PIK3CA		MTP	Multigene Tumor Panel	259

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Pinworm prep	X	CMMP	Clinical Microscopy, Misc	147
Pipette calibration-gravimetric		I	Instrumentation	131
Plasma cell neoplasms		PCNEO	Flow Cytometry, Plasma Cell Neoplasms	215
Plasma hemoglobin		PHG	Plasma Hemoglobin	76
Plasminogen antigen		CGE/CGEX	Coagulation, Extended	161
Plasminogen activator inhibitor		CGE/CGEX	Coagulation, Extended	161
Plasminogen activator inhibitor (PAI)-1		MGL1	Molecular Genetics	246–247
Platelet aggregation		PF	Platelet Function	166
Platelet antibody detection	X	PS	Platelet Serology	223
Platelet calculator		TRC	Transfusion-Related Cell Count	222
Platelet count	X	**FH1-FH4, FH6, FH9, FH10, FH13, FH14, FH1P-FH4P, FH6P, FH9P, FH10P, FH13P, FH14P**	Hematology Automated Differential	136–137
		FH3Q, FH4Q, FH6Q, FH9Q	Quality Cross Check, Automated Hematology Series	45
	X	**FH15**	Centrifugal Hematology	137
	X	**HE, HEP**	Basic Hematology	136
		LN9	Hematology Cal Ver/Lin	123
Platelet count (platelet-rich plasma)	X	TRC	Transfusion-Related Cell Count	222
Platelet crossmatch		PS	Platelet Serology	223
Platelet count (estimated)		EHE1	Expanded Virtual Peripheral Blood Smear	144
		VPBS	Virtual Peripheral Blood Smear	144
Platelet function		PF1	Platelet Function	166
Platelet mapping		PLTM	Platelet Mapping	169
Plesiomonas shigelloides		GIP	Gastrointestinal Panel	203
	X	**GIP5**	Gastrointestinal Panel	203
PML/RARA		MHO2, MHO3	Molecular Hematologic Oncology	260
		MRD2	Minimal Residual Disease	260
PNA FISH-*Staphylococcus*		PNA1	PNA FISH for *Staphylococcus*	180
PNA FISH-yeast		PNA2	PNA FISH for Yeast	180
Pneumocystis detection		PCP1	*Pneumocystis jiroveci*, Calcofluor White Stain	191
		PCP2	*Pneumocystis jiroveci*, DFA Stain	191
Pneumocystis detection (cont.)		PCP4	*Pneumocystis jiroveci*, GMS Stain	191
PNH immunophenotype		PNH	Paroxysmal Nocturnal Hemoglobinuria, RBC	215
PO2	X	**AQ, AQ2, AQ3, AQ4**	Aqueous Blood Gas	92
		AQQ, AQ2Q, AQ3Q, AQ4Q	Quality Cross Check, Critical Care Aqueous Blood Gas Series	44
		LN13, LN13C	Blood Gas Cal Ver/Lin	124–125
		POC10, POC11	POC Competency Blood Gases	53
Porphobilinogen, urine		UPBG	Porphobilinogen, Urine	70
Posaconazole		AFD	Antifungal Drugs Monitoring	106
Postanalytical DNA sequencing		SEC	DNA Sequencing Count	248
Postvasectomy sperm count, manual	X	PV	Postvasectomy Sperm Count	156
Postvasectomy sperm count, automated		PV1	Postvasectomy Sperm Count	156
Potassium	X	**AQ, AQ2, AQ3, AQ4**	Aqueous Blood Gas	92
		AQQ, AQ2Q, AQ3Q, AQ4Q	Quality Cross Check, Critical Care Aqueous Blood Gas Series	44
	X	**C1, C3, C3X, C4, CZ, CZX, CZ2X**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FLD2	Body Fluid Chemistry 2	73
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
		LN13C	Blood Gas Cal Ver/Lin	124–125
		POC10, POC11	POC Competency Blood Gases	53
Potassium, urine		LN6	Urine Chemistry Cal Ver/Lin	122
	X	U	Urine Chemistry, General	68
Potassium, vitreous fluid		VF	Vitreous Fluid, Post-mortem	101
PRA		MX1B, MX1C, MX1E, MXB, MXC	HLA Analysis, Class I	234–235

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
PRA (cont.)		MX2B, MX2C, MX2E, MXB, MXC	HLA Analysis, Class II	234–235
Prader-Willi/Angelman syndrome	X	MGL1	Molecular Genetics	246–247
Prealbumin (transthyretin)	X	C3, C3X, CZ, CZX, CZ2X	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
	X	S2, S4	Immunology, Special	207
Pregabalin		DMPM	Drug Monitoring for Pain Management	107
		T	Toxicology	96
		UT	Urine Toxicology	96
		ZE	Therapeutic Drug Monitoring, Extended	60
Prekallikrein		CGE/CGEX	Coagulation, Extended	161
Predictive markers by immunohistochemistry	X	HER2	HER2 by Immunohistochemistry	274
		GHER2	Gastric HER2	274
		PM1	CD117 by Immunohistochemistry	273
	X	PM2	ER, PgR by Immunohistochemistry	274
		PM3	CD20 by Immunohistochemistry	273
		PM5	Immunohistochemistry TMA	273
Primidone	X	**CZ, CZX, CZ2X, Z**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		LN3	TDM Cal Ver/Lin	121
Pro B-type natriuretic peptides		BNP	B-Type Natriuretic Peptides, 2 Chall	61
	X	BNP5	B-Type Natriuretic Peptides, 5 Chall	61
		BNPQ	Quality Cross Check, B-Type Natriuretic Peptides	41
Procainamide	X	**CZ, CZX, CZ2X, Z**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		LN3	TDM Cal Ver/Lin	121
Procalcitonin		LN41	Procalcitonin Cal Ver/Lin	130
	X	PCT	Procalcitonin	77
Progesterone		LN8	Reproductive Endocrinology Cal Ver/Lin	123
	X	Y/YY	Ligand Assay, Special	84
Progesterone receptors by immunohistochemistry	X	PM2	ER, PgR by Immunohistochemistry	274
Prolactin		LN8	Reproductive Endocrinology Cal Ver/Lin	123
	X	Y/YY	Ligand Assay, Special	84
Propoxyphene		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
Propranolol		T	Toxicology	96
		UT	Urine Toxicology	96
Prostate-specific antigen (PSA)	X	K, KK, K2	Ligand Assay, General	82
		LN23	PSA Cal Ver/Lin	127
Prostate-specific antigen, complexed (cPSA)	X	K/KK	Ligand Assay, General	82
Prostate-specific antigen, free (PSA, free)	X	K/KK	Ligand Assay, General	82
Prostatic acid phosphatase (PAP)	X	K/KK	Ligand Assay, General	82
Protein electrophoresis, serum, interpretation		SPE	Protein Electrophoresis	76
Protein C		CGE/CGEX	Coagulation, Extended	161
		CGS2	Coag Special, Series 2	162–163
		LN35	Thrombophilia Cal Ver/Lin	129
Protein S		CGE/CGEX	Coagulation, Extended	161
		CGS2	Coag Special, Series 2	162–163
Protein, total	X	**C1, C3, C3X, CZ, CZX, CZ2X**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FLD	Body Fluid	72
		FLDQ	Quality Cross Check, Body Fluid Chemistry	42
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Protein, total (cont.)		SPE	Lipoprotein and Protein Electrophoresis	76
Protein, CSF	X	M, OLI	CSF Chemistry and Oligoclonal Bands	74
Protein, urine	X	CMP, CMP1	Clinical Microscopy	146
		CMQ	Quality Cross Check, Urinalysis	46
		DSC	Dipstick Confirmatory	149
	X	HCC2	Waived Combination	66
		LN6	Urine Chemistry Cal Ver/Lin	122
		POC3	POC Urine Dipstick Competency	52
	X	U	Urine Chemistry, General	68
Prothrombin mutation	X	MGL1	Molecular Genetics	246–247
	X	TPM	Thrombophilia Mutations	250
Prothrombin time	X	**CGB**	Basic Coagulation	160
	X	**CGL**	Coagulation, Limited	160
		CGLQ	Quality Cross Check, Coagulation, Limited	47
		CGS1	Coag Special, Series 1	162–163
		CGS4	Coag Special, Series 4	162–163
		DBGN	Anticoagulant Monitoring, Dabigatran	163
		FNPX	Anticoagulant Monitoring, Fondaparinux	163
		POC6	POC PT/INR, CoaguChek XS Plus	52
		RVBN	Anticoagulant Monitoring Rivaroxaban	163
	X	**WP3, WP4, WP6, WP9**	Whole Blood Coagulation	168
Prothrombin time, dilute		CGE/CGEX	Coagulation, Extended	161
Provider-performed microscopy		CMMP	Clinical Microscopy, Misc	147
PRU test		PIA, PIAX	Drug-Specific Platelet Aggregation	167
Pseudocholinesterase	X	C7	Pseudocholinesterase	77
Pseudoephedrine		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
PTEN		GLI	Glioma	259
Pyridinoline (PYD)		BU	Bone and Mineral, Urine	85
Q-PROBES		QP191	Technical Staffing Ratios	25
Q-PROBES (cont.)		QP192	Opioid Drug Testing Stewardship	26
		QP193	Expression Rates in Invasive Breast Carcinoma	27
		QP194	The Impact of Pathologist Review on Peripheral Blood Smears	28
Q-TRACKS		QT1	Patient Identification Accuracy	31
		QT2	Blood Culture Contamination	31
		QT3	Laboratory Specimen Acceptability	32
		QT4	In-Date Blood Product Wastage	32
		QT5	Gynecologic Cytology Outcomes - Biopsy Correlation Performance	37
		QT7	Satisfaction with Outpatient Specimen Collection	33
		QT8	State Test TAT Outliers	33
		QT10	Critical Values Reporting	34
		QT15	TATs of Troponin	35
		QT16	Corrected Results	36
		QT17	Outpatient Order Entry Errors	36
Quetiapine		T	Toxicology	96
		UT	Urine Toxicology	96
Quinidine	X	**CZ, CZX, CZ2X, Z**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		LN3	TDM Cal Ver/Lin	121
		T	Toxicology	96
		UT	Urine Toxicology	96
Quinine		T	Toxicology	96
		UT	Urine Toxicology	96
Ranitidine		T	Toxicology	96
		UT	Urine Toxicology	96
Rapamycin (sirolimus)	X	CS	Immunosuppressive Drugs	59
Rapid group A strep	X	**D**	Bacteriology	173
	X	**D4**	Bacteriology, Limited	176
	X	**D6**	Rapid Group A Strep	178
	X	D9	Rapid Group A Strep, Waived	178
	X	**MC1**	Microbiology Combination with GC	176

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Rapid group A strep (cont.)	X	**MC2**	Microbiology Combination	176
	X	**MC4**	Urine Colony Count Combination	177
	X	**MC5**	Throat Culture/Rapid Strep	177
RBC count		ABF1, ABF2, ABF3	Automated Body Fluid	148
	X	**FH1-FH4, FH6, FH9, FH10, FH13, FH14, FH1P-FH4P, FH6P, FH9P, FH10P, FH13P, FH14P**	Hematology Automated Differential	136–137
		FH3Q, FH4Q, FH6Q, FH9Q	Quality Cross Check, Automated Hematology Series	45
	X	**HE, HEP**	Basic Hematology	136
		LN9	Hematology Cal Ver/Lin	123
RBC count, automated, urine (quantitative)		UAA, UAA1	Automated Urinalysis	149
RBC automated count, fluid		ABF1, ABF2, ABF3	Automated Body Fluid	148
RBC manual count, fluid	X	HFC, HFCI	Hemocytometer Fluid Count	150–151
RBC folate	X	FOL	RBC Folate	88
RBC morphology		EHE1	Expanded Virtual Peripheral Blood Smear	144
		VPBS	Virtual Peripheral Blood Smear	144
RDW		FH1-FH4, FH6, FH9, FH10, FH13, FH14, FH1P-FH4P, FH6P, FH9P, FH10P, FH13P, FH14P	Hematology Automated Differential	136–137
		FH3Q, FH4Q, FH6Q, FH9Q	Quality Cross Check, Automated Hematology Series	45
		HE, HEP	Basic Hematology	136
Red blood cell antigen detection		J, J1	Transfusion Medicine	218
Red blood cell antigen genotyping		RAG	Red Blood Cell Antigen Genotyping	221
Red blood cell antigen typing		RBCAT	Red Blood Cell Antigen Typing	221
Reducing substance, urine	X	CMP, CMP1	Clinical Microscopy	146
		CMQ	Quality Cross Check, Urinalysis	46
	X	HCC2	Waived Combination	66

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Reducing substance, urine (cont.)		POC3	POC Urine Dipstick Competency	52
Refractometer check		I	Instrumentation	131
Renin	X	RAP	Renin and Aldosterone	89
Reptilase time		CGE/CGEX	Coagulation, Extended	161
Respiratory syncytial virus (RSV)		ID2	Nucleic Acid Amp, Respiratory	198
	X	**ID3**	Influenza A, Influenza B, RSV by NAA	198
	X	**IDR**	Infectious Disease, Respiratory Panel	202
	X	**VR1**	Virology Culture	196
	X	**VR2**	Viral Antigen Detection by DFA	196
	X	**VR4**	Virology Antigen Detection by EIA and Latex	196
Reticulocyte count, absolute	X	FH14, FH14P	Hematology Automated Differential	137
	X	RT, RT2, RT3, RT4	Reticulocyte	142
		RTQ, RT3Q, RT4Q	Quality Cross Check, Reticulocyte	45
Reticulocyte count, percent	X	FH14, FH14P	Hematology Automated Differential	137
		LN18, LN19	Reticulocyte Cal Ver/Lin	126
	X	RT, RT2, RT3, RT4	Reticulocyte	142
		RTQ, RT3Q, RT4Q	Quality Cross Check, Reticulocyte	45
Reticulocyte hemoglobin (RET-He)		FH14, FH14P	Hematology Automated Differential	137
RETT syndrome	X	RETT	RETT Syndrome Genotyping	249
RhD	X	MGL2	Molecular Genetics	246–247
RhD typing	X	**J, J1**	Transfusion Medicine	218
	X	**JAT**	Transfusion Medicine, Automated	219
		JATE1	Transfusion Medicine, Automated, Educational	219
		JATQ	Quality Cross Check, Transfusion Medicine	49
		TMCA	Transfusion Medicine, Competency Assessment	223
Rheumatoid factor	X	**IL, RF/RFX**	Immunology	206
Rhinovirus		ID2	Nucleic Acid Amp, Respiratory	198
	X	**IDR**	Infectious Disease, Respiratory Panel	202
RNA sequencing		RNA	RNA Sequencing	258
Rotavirus		GIP	Gastrointestinal Panel	203
	X	**GIP5**	Gastrointestinal Panel	203

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Rotavirus (cont.)		SP, SPN	Stool Pathogens	184
	X	**VR4**	Viral Antigen Detection by EIA and Latex	196
RSV		ID2	Nucleic Acid Amp, Respiratory	198
	X	**ID3**	Influenza A, Influenza B, RSV by NAA	198
	X	**IDR**	Infectious Disease, Respiratory Panel	202
	X	**VR1**	Virology Culture	196
	X	**VR2**	Viral Antigen Detection by DFA	196
	X	**VR4**	Viral Antigen Detection by EIA and Latex	196
Rubella antibody, IgG	X	**IL, RUB/ RUBX**	Immunology	206
Rubeola antibody (English measles)	X	VR3	Antibody Detection-Infectious Disease Serology	204
Rufinamide		ZE	Therapeutic Drug Monitoring, Extended	60
Rupture of fetal membranes		ROM1	Rupture of Fetal Membranes	152
Russell's viper venom time, dilute		CGE/CGEX	Coagulation, Extended	161
Salicylate	X	CZ, CZX, CZ2X, Z	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FTC	Forensic Toxicology, Criminalistics	104
		LN3	TDM Cal Ver/Lin	121
	X	SDS	Serum Drug Screen	101
		T	Toxicology	96
		UT	Urine Toxicology	96
Salmonella		GIP	Gastrointestinal Panel	203
	X	**GIP5**	Gastrointestinal Panel	203
Sapovirus (I, II, IV, V)		GIP	Gastrointestinal Panel	203
	X	**GIP5**	Gastrointestinal Panel	203
Sarcoma by FISH		CYK	Fluorescence In Situ Hybridization	241
Sarcoma translocation		SARC	Sarcoma Translocation	257
Scl-70 (anti-DNA topoisomerase)		RDS	Rheumatic Disease Special	211
Scopolamine		DFC	Drug-Facilitated Crime	108
Secobarbital		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		UDC	Forensic Urine Drug Testing, Confirmatory	99
Selenium	X	R	Trace Metals	78
Selenium, urine		TMU	Trace Metals, Urine	103
Selenium, whole blood		TMWB	Trace Metals, Whole Blood	103
Semen analysis	X	ASA, SC, SV, PV	Semen Analysis	156
		SC1, SM	Semen Analysis	156
		SMCD, SM1CD, SM2CD	Semen Analysis, CD-ROM	156
SERPINA1 genotyping	X	AAT	Alpah-1 Antitrypsin Genotyping	243
Sertraline		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Serum free light chains		SFLC	Serum Free Light Chains	212
Sex hormone-binding globulin (SHBG)		ABS	Testosterone and Estradiol Accuracy	113
	X	DY	Ligand Assay, Special	84
Shiga toxin		SP	Stool Pathogens-Rapid and Molecular	184
		ST	Shiga Toxin	185
Shiga-like toxin producing *E. coli* (STEC)		GIP	Gastrointestinal Panel	203
		GIP5	Gastrointestinal Panel	203
Shigella		GIP	Gastrointestinal Panel	203
	X	**GIP5**	Gastrointestinal Panel	203
Sickle cell screen, qualitative	X	HG	Hemoglobinopathy	141
	X	SCS	Sickle Cell Screen	143
Sirolimus (Rapamycin)	X	CS	Immunosuppressive Drugs	59
SLCO1B1		PGX	Pharmacogenetics	249
Sodium	X	**AQ, AQ2, AQ3, AQ4**	Aqueous Blood Gas	92
		AQQ, AQ2Q, AQ3Q, AQ4Q	Quality Cross Check, Critical Care Aqueous Blood Gas Series	44
	X	**C1, C3, C3X, C4, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FLD2	Body Fluid Chemistry 2	73
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
		LN13C	Blood Gas Cal Ver/Lin	124–125

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Sodium (cont.)		POC10, POC11	POC Competency Blood Gases	53
Sodium, urine		LN6	Urine Chemistry Cal Ver/Lin	122
	X	U	Urine Chemistry, General	68
Sodium, vitreous fluid		VF	Vitreous Fluid, Post-mortem	101
Soluble transferrin receptor		STFR	Soluble Transferrin Receptor	80
Somatomedin C (IGF-1)	X	Y, YY	Ligand Assay, Special	84
SOX10		PM5	Immunohistochemistry TMA	273
Specific gravity	X	CMP, CMP1	Clinical Microscopy	146
		CMQ	Quality Cross Check, Urinalysis	46
		DAI	Urine Drug Adulterant/ Integrity Testing	98
	X	HCC2	Waived Combination	66
		POC3	POC Urine Dipstick Competency	52
		UDC	Forensic Urine Drug Testing, Confirmatory	99
Spectrophotometer linearity		I	Instrumentation	131
Sperm count	X	SMCD	Semen Analysis, CD-ROM	156
Sperm count, automated		SC1, PV1	Semen Analysis	156
Sperm count, manual	X	SC	Semen Analysis	156
	X	PV	Postvasectomy Sperm Count	156
Sperm morphology		SM	Semen Analysis	156
		SM1CD	Semen Analysis, CD-ROM	156
Sperm motility		SMCD	Semen Analysis, CD-ROM	156
Sperm viability		SM2CD	Semen Analysis, CD-ROM	156
	X	SV	Semen Analysis	156
Spinal fluid meningitis panel	X	D	Bacteriology	173
Spinal muscular atrophy	X	MGL2	Molecular Genetics	246–247
Spinocerebellar ataxia	X	MGL2	Molecular Genetics	246–247
Split fats		FCFS	Fecal Fat	75
Staphylococcus aureus-blood culture		BCS1	Blood Culture *Staphylococcus aureus*	180
STEC (Shiga-like toxin producing *E. coli*)		GIP	Gastrointestinal Panel	203
Strep screen		POC4	POC/Waived Strep Screen Competency	52
Streptococcus agalactiae	X	**D8**	Group B Strep	179
Streptococcus agalactiae (cont.)		IDME	Meningitis/Encephalitis Panel	202
Streptococcus pneumoniae		IDME	Meningitis/Encephalitis Panel	202
		SBAS	*S. pneumoniae* Ag Detection	179
Streptococcus pyogenes	X	**D**	Bacteriology	173
	X	**D1, D7**	Throat, Urine Cultures	175
	X	**D4**	Bacteriology, Ltd	176
	X	**D6**	Rapid Group A Strep	178
	X	D9	Rapid Group A Strep, Waived	178
	X	**MC1**	Microbiology Combination with GC	176
	X	**MC2**	Microbiology Combination	176
	X	**MC4**	Urine Colony Count Combination	177
	X	**MC5**	Throat Culture/Rapid Strep	177
Strychnine		T	Toxicology	96
		UT	Urine Toxicology	96
Sulfate		KSA	Kidney Stone Risk Assessment	69
Sulfosalicylic acid (SSA)		DSC	Dipstick Confirmatory	149
Surgical pathology		DPATH/ DPATH1	Online Digital Slide Program	265
		PIP/PIP1, PIPW/PIPW1	Performance Improvement Program in Surgical Pathology	262–263
		VBP/VBP1	Online Virtual Biopsies Program	264
Synthetic cannabinoid/ designer drugs		SCDD	Synthetic Cannabinoid/ Designer Drugs	105
Syphilis	X	**G**	Syphilis Serology	212
T3, free (triiodothyronine)		ABTH	Harmonized Thyroid	114
	X	C1, C3, C3X, CZ, CZX, CZ2X	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
	X	K/KK	Ligand Assay, General	82
T3, total (triiodothyronine)		ABTH	Harmonized Thyroid	114
	X	**C1, C3, C3X, CZ, CZX, CZ2X**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
	X	**K/KK**	Ligand Assay, General	82
		LN5	Ligand Assay Cal Ver/Lin	121–122
		LN5S	Ligand Assay, Siemens Cal Ver/Lin	121–122

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
T3, uptake and related tests	X	**C1, C3, C3X, CZ, CZX, CZ2X**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
	X	**K/KK**	Ligand Assay, General	82
T4, free (thyroxine, free)		ABTH	Harmonized Thyroid	114
	X	**C1, C3, C3X, CZ, CZX, CZ2X**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
	X	**K/KK**	Ligand Assay, General	82
T4, total (thyroxine, total)		ABTH	Harmonized Thyroid	114
	X	**C1, C3, C3X, CZ, CZX, CZ2X**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
	X	**K/KK**	Ligand Assay, General	82
		LN5	Ligand Assay Cal Ver/Lin	121–122
		LN5S	Ligand Assay, Siemens Cal Ver/Lin	121–122
Tacrolimus	X	CS	Immunosuppressive Drugs	59
		LN31	Immunosuppressive Drugs Cal Ver/Lin	128
Tapentadol		DMPM	Drug Monitoring for Pain Management	107
Tapentadol-O-sulfate		DMPM	Drug Monitoring for Pain Management	107
Tay Sachs	X	MGL4	Molecular Genetics	246–247
tCO_2		AQ, AQ2, AQ3, AQ4	Aqueous Blood Gas	92
		AQQ, AQ2Q, AQ3Q, AQ4Q	Quality Cross Check, Critical Care Aqueous Blood Gas Series	44
		POC10, POC11	POC Competency Blood Gases	53
Temazepam		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UT	Urine Toxicology	96
Teriflunomide		ZE	Therapeutic Drug Monitoring, Extended	60
Testosterone		ABS	Accuracy-Based Testosterone and Estradiol	113
		LN8	Reproductive Endocrinology Cal Ver/Lin	123
	X	Y/YY	Ligand Assay, Special	84
Testosterone, bioavailable		ABS	Testosterone and Estradiol Accuracy	113
		DY	Ligand Assay, Special	84
Testosterone, free		ABS	Testosterone and Estradiol Accuracy	113
	X	DY	Ligand Assay, Special	84
Tetrahydrozoline		DFC	Drug-Facilitated Crime	108
Thallium, urine		TMU	Trace Metals, Urine	103
Thallium, whole blood		TMWB	Trace Metals, Whole Blood	103
Theophylline	X	**CZ, CZX, CZ2X, Z**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		LN3	TDM Cal Ver/Lin	121
Throat culture	X	**D1, D7**	Throat, Urine Cultures	175
	X	**D4**	Bacteriology, Ltd	176
	X	**MC1**	Microbiology Combination with GC	176
	X	**MC2**	Microbiology Combination	176
	X	**MC4**	Urine Colony Count Combination	177
	X	**MC5**	Throat Culture/Rapid Strep	177
Thrombin time		CGE/CGEX	Coagulation, Extended	161
		CGS4	Coag Special, Series 4	162–163
		DBGN	Dabigatran	163
Thromboelastogram		TEG	Viscoelastometry	166
Thrombophilia mutations	X	TPM	Thrombophilia Mutations	250
Thyroglobulin	X	TM/TMX	Tumor Markers	89
Thyroid-stimulating hormone (TSH)		ABS	Accuracy-Based Testosterone and Estradiol	113
		ABTH	Harmonized Thyroid	114
	X	**C1, C3, C3X, CZ, CZX, CZ2X**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
	X	**K/KK**	Ligand Assay, General	82
		LN5	Ligand Assay Cal Ver/Lin	121–122

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Thyroid-stimulating hormone (TSH) (cont.)		LN5S	Ligand Assay, Siemens Cal Ver/Lin	121–122
Thyroxine, free		ABTH	Harmonized Thyroid	114
	X	**C1, C3, C3X, CZ, CZX, CZ2X**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
	X	**K/KK**	Ligand Assay, General	82
Thyroxine, total		ABTH	Harmonized Thyroid	114
	X	**C1, C3, C3X, CZ, CZX, CZ2X**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
	X	**K/KK**	Ligand Assay, General	82
		LN5	Ligand Assay Cal Ver/Lin	121–122
		LN5S	Ligand Assay, Siemens Cal Ver/Lin	121–122
Tick identification		TMO	Ticks, Mites, and Other Arthropods	193
Tissue parasite identification	X	**BP**	Blood Parasite	193
	X	**P**	Parasitology	192
Tobramycin	X	**CZ, CZX, CZ2X, Z**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		LN3	TDM Cal Ver/Lin	121
Topiramate		T	Toxicology	96
		UT	Urine Toxicology	96
		ZE	Therapeutic Drug Monitoring, Extended	60
Total bile acids		TBLA	Total Bile Acid	78
Total bilirubin	X	**C1, C3, C3X, CZ, CZX, C4, CZ2X**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FLD2	Body Fluid Chemistry 2	73
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
	X	**NB**, NB2	Neonatal Bilirubin	65
Total bilirubin, urine	X	CMP, CMP1	Clinical Microscopy	146
	X	HCC2	Waived Combination	66
		DSC	Dipstick Confirmatory	149
Total free fatty acids		FCFS	Fecal Fat	75

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Total hCG	X	**FP1T**	First Trimester Maternal Screening, Total hCG	87
Total hemolytic complement		CH50	Total Hemolytic Complement	212
Total iron binding capacity, measured and % saturation	X	C3, C3X, CZ CZX, CZ2X	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
Total nitrogen, urine		U	Urine Chemistry, General	68
Total nucleated cells		CBT	Cord Blood Testing	225
		SCP	Stem Cell Processing	225
Total nucleated cells manual differential count (body fluid)		HFC/HFCI	Hemocytometer Fluid Count	150–151
		VBF	Virtual Body Fluid	148
Total nucleated red cells		CBT	Cord Blood Testing	225
		SCP	Stem Cell Processing	225
Total protein	X	**C1, C3, C3X, CZ, CZX, CZ2X**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FLD	Body Fluid	72
		FLDQ	Quality Cross Check, Body Fluid Chemistry	42
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
		SPE	Protein Electrophoresis	76
Total protein, CSF	X	M, OLI	CSF Chemistry and Oligoclonal Bands	74
Total protein, urine		CMP, CMP1	Clinical Microscopy	146
		CMQ	Quality Cross Check, Urinalysis	46
	X	HCC2	Waived Combination	66
		LN6	Urine Chemistry Cal Ver/Lin	122
	X	U	Urine Chemistry, General	68
Total tricyclics	X	SDS	Serum Drug Screen	101
	X	ZT	TDM, Special	60
Touch imprint/crush prep		TICP, TICP1	Touch Imprint/Crush Prep	280
Toxicology, serum, qualitative	X	SDS	Serum Drug Screen	101
	X	T	Toxicology	96
Toxicology, urine, qualitative	X	DMPM	Drug Monitoring for Pain Management	107

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Toxicology, urine, qualitative (cont.)	X	T	Toxicology	96
	X	UDS, UDS6	Urine Drug Screen	98
	X	UT	Urine Toxicology	96
Toxicology, urine, qualitative/quantitative	X	DMPM	Drug Monitoring for Pain Management	107
	X	UDC	Forensic Urine Drug Testing, Confirmatory	99
Toxoplasma gondii	X	VR3	Antibody Detection-Infectious Disease Serology	204
TPMT		PGX3	Pharmacogenetics	249
Tramadol		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Transferrin	X	C3, C3X, CZ, CZX, CZ2X	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		LN7	Immunology Cal Ver/Lin	123
	X	S2, S4	Immunology, Special	207
Transfusion medicine		ETME1	Expanded Transfusion Medicine Exercises	227
		EXM, EXM2	Electronic Crossmatch	219–220
	X	**J, J1**	Transfusion Medicine	218
	X	**JAT**	Transfusion Medicine, Automated	219
		JATE1	Transfusion Medicine, Automated	219
		JE1	Transfusion Medicine, Education	218
		TMCA	Transfusion Medicine, Competency Assessment	223
		TMCAD	Transfusion Medicine, Competency Assessment	223
		TMCAE	Transfusion Medicine, Competency Assessment	224
		TMCAF	Transfusion Medicine, Competency Assessment	224
	X	TRC	Transfusion-Related Cell Count	222
Trazodone		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Treponema pallidum	X	**G**	Syphilis Serology	212
Trichomonas vaginalis		MVP	Molecular Vaginal Panel	186
		TVAG	*Trichomonas vaginalis*, Molecular	187
	X	VS, VS1	Vaginitis Screen	185
Tricyclic group		T	Toxicology	96
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
Tricyclics, total	X	SDS	Serum Drug Screen	101
	X	ZT	TDM, Special	60
Triglycerides		ABL	Accuracy-Based Lipid	112
	X	**C1, C3, C3X, C4, CZ, CZX, CZ2X**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FCFS	Fecal Fat	75
		FLD	Body Fluid	72
		FLDQ	Quality Cross Check, Body Fluid Chemistry	42
	X	LCW	Ltd Chem, Waived	65
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Triiodothyronine (T3)		ABTH	Harmonized Thyroid	114
	X	**C1, C3, C3X, CZ, CZX, CZ2X**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
	X	**K/KK**	Ligand Assay, General	82
		LN5	Ligand Assay Cal Ver/Lin	121–122
		LN5S	Ligand Assay, Siemens Cal Ver/Lin	121–122
Triiodothyronine (T3), free		ABTH	Harmonized Thyroid	114
	X	C1, C3, C3X, CZ, CZX, CZ2X	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
	X	K/KK	Ligand Assay, General	82
Trimipramine		T	Toxicology	96
		UT	Urine Toxicology	96
Troponin I, plasma	X	PCARI, PCARM, PCARMX	Plasma Cardiac Markers	65
		POC12	Competency Plasma Cardiac Markers	53
Troponin I, serum	X	CRT, CRTI	Cardiac Markers	62
		LN25	Troponin I Cal Ver/Lin	127

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Troponin T, serum		LN27	Troponin T Cal Ver/Lin	127
		TNT	Troponin T	62
	X	TNT5	Troponin T, 5 Challenge	62
Tumor necrosis factor (TNF)-alpha		CTKN	Cytokines	210
UGT1A1		PGX3	Pharmacogenetics	249
Unsaturated iron binding capacity, measured	X	C3, C3X, CZ, CZX, CZ2X	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
Urea nitrogen	X	**AQ2, AQ4**	Aqueous Blood Gas	92
		AQ2Q, AQ4Q	Quality Cross Check, Critical Care Aqueous Blood Gas Series	44
	X	**C1, C3, C3X, C4, CZ, CZX, CZ2X**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FLDQ	Quality Cross Check, Body Fluid Chemistry	42
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Urea nitrogen, urine		LN6	Urine Chemistry Cal Ver/Lin	122
	X	U	Urine Chemistry, General	68
Urea nitrogen, vitreous fluid		VF	Vitreous Fluid, Post-mortem	101
Urease	X	RUR	Rapid Urease	184
Uric acid	X	**C1, C3, C3X, C4, CZ, CZX, CZ2X**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		FLD2	Body Fluid Chemistry 2	73
		IFS	Interfering Substances	132
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Uric acid, urine		LN6	Urine Chemistry Cal Ver/Lin	122
	X	U	Urine Chemistry, General	68
Urine albumin		LN20	Urine albumin Cal Ver/Lin	126
Urine albumin (cont.)	X	U	Urine Chemistry, General	68
	X	UMC	Urine Albumin Creatinine	153
Urine albumin: creatinine ratio		ABU	Accuracy-Based Urine	113
		U	Urine Chemistry, General	68
		UMC	Urine Albumin Creatinine	153
Urine colony count		MC3	Urine Colony Count	177
		MC4	Urine Colony Count Combination	177
Urine crystals identification		URC	Crystals	149
Urine crystals, semiquantitative		UAA	Automated Urinalysis	149
Urine culture	X	**D2, D7**	Throat, Urine Cultures	175
	X	**D4**	Bacteriology, Limited	176
	X	**MC1**	Microbiology Combination with GC	176
	X	**MC2**	Microbiology Combination	176
		MC3	Urine Colony Count	177
	X	**MC4**	Urine Colony Count Combination	177
	X	**MC5**	Throat Culture/Rapid Strep	177
Urine dipstick	X	CMP, CMP1	Clinical MIcroscopy	146
		CMQ	Quality Cross Check, Urinalysis	46
	X	HCC2	Waived Combination	66
		POC3	POC/Waived Urine Dipstick Competency	52
Urine drug screen	X	DMPM	Drug Monitoring for Pain Management	107
	X	UDS, UDS6	Urine Drug Screen	98
Urine hCG, qualitative	X	UHCG	Urine hCG	152
Urine sediment, color photographs	X	CMP, CMP1, CMMP	Clinical Microscopy	146–147
Urobilinogen	X	CMP, CMP1	Clinical Microscopy	146
		CMQ	Quality Cross Check, Urinalysis	46
	X	HCC2	Waived Combination	66
		POC3	POC Urine Dipstick Competency	52
Uroporphyrin	X	N/NX	Urine Chemistry, Special	69
Urothelial carcinoma by FISH, hybridization and interpretation on-site	X	CYI	Fluorescence In Situ Hybridization, Urothelial Carcinoma	240
Vaginal wet preparations	X	CMMP	Clinical Microscopy, Misc	147
Vaginitis screen		BV	Bacterial Vaginosis	185

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Vaginitis screen (cont.)		MVP	Molecular Vaginal Panel	186
	X	**VS**	BD Affirm VP III Antigen Detection	185
	X	VS1	Genzyme OSOM *Trichomonas*	185
		VS2	Vaginitis Screen, Virtual Gram Stain	186
Valproic acid	X	**CZ, CZX, CZ2X, Z**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		DFC	Drug-Facilitated Crime	108
		LN3	TDM Cal Ver/Lin	121
		T	Toxicology	96
		UT	Urine Toxicology	96
Valproic acid, free	X	CZ, CZX, CZ2X, Z	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
Vancomycin	X	CZ, CZX, CZ2X, Z	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		LN3	TDM Cal Ver/Lin	121
Vancomycin-resistant *Enterococcus*		IDN, IDO	Nucleic Acid Amp, Organisms	201
		VRE	Vancomycin-resistant *Enterococcus*	187
Vanillylmandelic acid	X	N/NX	Urine Chemistry, Special	69
Variant interpretation only		VIP, VIP1	Variant Interpretation Only	250
Varicella-zoster virus (VZV)		ID1	Nucleic Acid Amplification	197
		IDME	Meningitis/Encephalitis Panel	202
	X	**VR1**	Virology Culture	196
	X	**VR2**	Viral Antigen Detection by DFA	196
	X	VR3	Antibody Detection-Infectious Disease Serology	204
Vascular endothelial growth factor (VEGF)		CTKN	Cytokines	210
Venlafaxine		T	Toxicology	96
		UT	Urine Toxicology	96
Verapamil		T	Toxicology	96
		UT	Urine Toxicology	96
Viability		CBT	Cord Blood Testing	225
		SCP	Stem Cell Processing	225
Vibrio cholerae		GIP	Gastrointestinal Panel	203
	X	**GIP5**	Gastrointestinal Panel	203
Viral antigen detection	X	**HC2**	HSV by DFA	197
		POC8	POC Influenza A/B Ag	52
Viral antigen detection (cont.)	X	**VR2**	Viral Antigen Detection by DFA	196
	X	**VR4**	Viral Antigen Detection by EIA and Latex	196
Viral isolation/ identification	X	**HC4**	HSV Culture	197
	X	**ID3**	Influenza A, Influenza B, RSV by NAA	198
	X	**IDR**	Infectious Disease, Respiratory Panel	202
	X	**VR1**	Virology Culture	196
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		VGS2	Virtual Gram Stain Advanced	178
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Viscosity		V	Viscosity	212
Vitamin A		BMV3	Bone Markers and Vitamins	86
Vitamin B12	X	K, KK, K2	Ligand Assay, General	82
		LN5	Ligand Assay Cal Ver/Lin	121–122
		LN5S	Ligand Assay, Siemens Cal Ver/Lin	121–122
Vitamin B12, active		MMA	MMA and Active B12	82
Vitamin D, 25-OH	X	ABVD	Accuracy-Based Vitamin D	85
		LN40	Vitamin D Cal Ver/Lin	129
	X	VITD	25-OH Vitamin D	84
Vitamin D, 1, 25 dihydroxy		BMV1	Bone Markers and Vitamins	86
Vitamin E		BMV4	Bone Markers and Vitamins	86
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Volatiles	X	AL1	Whole Blood Alcohol/ Volatiles	101
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		CGS3	Coag Special, Series 3	162–163
		LN37	von Willebrand Factor Ag Cal Ver/Lin	129
Voriconazole		AFD	Antifungal Drugs Monitoring	106
VZV		ID1	Nucleic Acid Amplification	197
	X	**VR1**	Virology Culture	196
	X	**VR2**	Viral Antigen Detection by DFA	196

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
VZV (cont.)	X	VR3	Antibody Detection-Infectious Disease Serology	204
Wavelength and photometric calibration		I	Instrumentation	131
WBC count		ABF1, ABF2, ABF3	Automated Body Fluid	148
		CBT	Cord Blood Testing	225
	X	**FH1-FH4, FH6, FH9, FH10, FH13, FH14, FH1P-FH4P, FH6P, FH9P, FH10P, FH13P, FH14P**	Hematology Automated Differential	136–137
		FH3Q, FH4Q, FH6Q, FH9Q	Quality Cross Check, Automated Hematology Series	45
	X	**FH15**	Centrifugal Hematology	137
		FL4	Flow Cytometry CD34+	213
	X	**HE, HEP**	Basic Hematology	136
		LN9	Hematology Cal Ver/Lin	123
	X	**RWBC**	Rapid Total White Blood Cell Count	141
		SCP	Stem Cell Processing	225
WBC automated count (fluid)		ABF1, ABF2, ABF3	Automated Body Fluid	148
WBC manual count (fluid)	X	HFC, HFCI	Hemocytometer Fluid Count	150–151
WBC count (urine)		UAA, UAA1	Automated Urinalysis	149
WBC count (leukocyte-reduced platelets)		TRC	Transfusion-Related Cell Count	222
WBC count (leukocyte-reduced RBCs)		TRC	Transfusion-Related Cell Count	222
WBC differential (manual)		EHE1	Expanded Virtual Peripheral Blood Smear	144
		VPBS	Virtual Peripheral Blood Smear	144
WBC differental (2-part)	X	**FH15**	Centrifugal Hematology	137
WBC differential, automated	X	**FH1-FH4, FH6, FH9, FH10, FH13, FH14, FH1P-FH4P, FH6P, FH9P, FH10P, FH13P, FH14P**	Hematology Automated Differential	136–137
		FH3Q, FH4Q, FH6Q, FH9Q	Quality Cross Check, Automated Hematology Series	45
WBC differential, body fluid		VBF	Virtual Body Fluid	148
WBC morphology		EHE1	Expanded Virtual Peripheral Blood Smear	144
WBC morphology (cont.)		VPBS	Virtual Peripheral Blood Smear	144
West Nile virus	X	NAT	Nucleic Acid Testing	230
Worm identification		WID	Worm Identification	194
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	X	**F3**	*Candida* Culture	190
Yersinia enterocolitica		GIP	Gastrointestinal Panel	203
	X	**GIP5**	Gastrointestinal Panel	203
Zaleplon		DFC	Drug-Facilitated Crime	108
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Ziprasidone		DFC	Drug-Facilitated Crime	108
Zolpidem		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
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		UT	Urine Toxicology	96
Zopiclone/Eszopiclone		DFC	Drug-Facilitated Crime	108
Zonisamide		ZE	Therapeutic Drug Monitoring, Extended	60

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