COLLEGE of AMERICAN PATHOLOGISTS

Laboratory Quality Solutions

2020 Surveys and Anatomic Pathology Education Programs

PERFORMANCE YOU CAN MEASURE. ACCURACY YOU CAN TRUST.

Together, we move forward to achieve better patient care.

Laboratory medicine is forever changing—more rapidly than ever before. Our comprehensive range of laboratory quality solutions constantly evolves to keep in step with these changes, enabling you more time for what matters most—accuracy in the laboratory.

Year over year the CAP innovates, drawing on the collective knowledge of thousands of experts in laboratory medicine to help laboratories navigate the changes they face. Much of this innovation comes from integrated solutions that include accreditation and proficiency testing (PT). Leveraging this knowledge helps you stay ahead of new technologies, changing testing requirements, and emerging diseases that contribute to the rapid evolution of clinical laboratory medicine.

CAP PT programs give you confidence in your results by allowing you to compare your performance against the largest peer groups. And our accreditation peer inspection model allows participants to develop meaningful connections and share best practices.

The CAP strives to improve every aspect of PT and accreditation, including:

- Expanding our broad range of PT with new testing programs—39 new Surveys in 2019 and 2020 for microbiology, anatomic pathology, molecular pathology, and many other disciplines
- Annually updating our 21 discipline-specific accreditation checklists—simplifying the compliance process and providing a roadmap for running a high-quality laboratory

And we are never done moving forward. The CAP continues to innovate and improve our laboratory quality solutions, providing better ways to serve you. After all, achieving the highest quality service and best patient care possible is the primary goal for all of us.

Table of Contents

2020 Surveys and Anatomic Pathology Education Programs

1 New Developments 3–6

2 Continuing Education 7–20
- Continuing Education Programs 8
- Competency Assessment Program 15
- QM*Ed*™ Online Educational Courses 18

3 Quality Management Tools 21–38
- Q-PROBES™ 24
- Q-TRACKS® 29

4 Quality Cross Check 39–50

5 Point-of-Care Programs 51–54

6 General Chemistry and Therapeutic Drug Monitoring 55–80
- General Chemistry and Therapeutic Drug Monitoring 56
- Urine Chemistry 68
- Special Chemistry 71

7 Endocrinology 81–90

8 Blood Gas, Critical Care, and Oximetry 91–94

9 Toxicology 95–110

10 Accuracy-Based Programs 111–116
- Accuracy-Based Programs 112
- Validated Materials 116

11 Instrumentation Verification Tools 117–134
- Calibration Verification/Linearity 118
- Instrumentation Quality Management Programs 132

12 Hematology and Clinical Microscopy 135–154
- Hematology 136
- Clinical Microscopy 146

13 Reproductive Medicine 155–158
- Andrology and Embryology 156

14 Coagulation 159–170

15 Microbiology 171–206
- Microbiology 172
- Bacteriology 173
- Mycobacteriology 188
- Mycology 189
- Parasitology 192
- Virology 195
- Multidiscipline Microbiology 201
- Infectious Disease Serology 205

16 Immunology and Flow Cytometry 207–218
- Immunology 208
- Flow Cytometry 215

17 Transfusion Medicine, Viral Markers, and Parentage Testing 219–234
- Transfusion Medicine 220
- Viral Markers 230
- Parentage Testing 233

18 Histocompatibility 235–240

19 Genetics and Molecular Pathology 241–262
- Cytogenetics 242
- Biochemical and Molecular Genetics 245
- Next-Generation Sequencing 254
- Molecular Oncology—Solid Tumors 258
- Molecular Oncology—Hematologic 262

20 Anatomic Pathology 263–292
- Surgical Pathology 264
- General Immunohistochemistry 278
- Predictive Markers 281
- Specialty Anatomic Pathology 283
- Cytopathology 285

21 Forensic Sciences 293–296

22 Analyte/Procedure Index 297–344

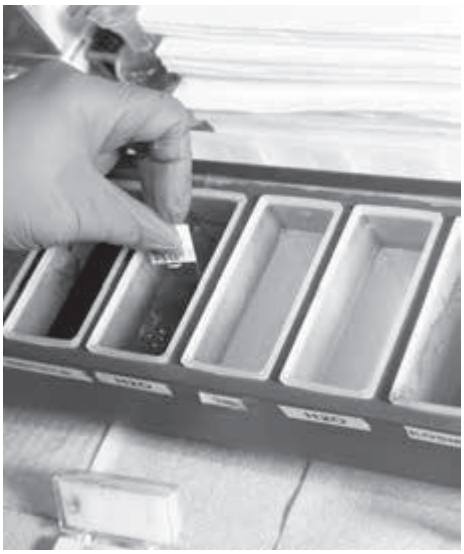
23 Program Code Page Index 345–348

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 proficiency testing 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



Immunohistochemistry (IHC) testing is changing at a rapid pace—so is our proficiency testing.

- Evaluate your laboratory's preanalytic processing steps for tissue and slide preparation of melanoma (HQMEL) and gliomas (HQNEU).
- Assess analytic and interpretive steps of IHC testing for the biomarkers c-Myc and Bcl-2 (MYBC).
- Test both pre- and postanalytic steps for IHC of dermatopathology markers (DPIHC).

New Developments

Quality Management Tools			
Subsection	**Name**	**Program Code**	**Page**
Q-PROBES™	Technical Competency Assessment of Peripheral Blood Smears	QP201	25
Q-PROBES	Red Blood Cell Utilization: Single and Double Unit Transfusions	QP202	26
Q-PROBES	Inpatient Test Utilization and Volume Benchmarking	QP203	27
Q-PROBES	Turnaround Time for Image–Guided Breast Needle Biopsy Specimens	QP204	28

Quality Cross Check			
Subsection	**Name**	**Program Code**	**Page**
General Chemistry and Therapeutic Drug Monitoring	Quality Cross Check—Cardiac Markers	CRTQ	42

General Chemistry and Therapeutic Drug Monitoring			
Subsection	**Name**	**Program Code**	**Page**
General Chemistry and Therapeutic Drug Monitoring	Quality Cross Check—Cardiac Markers	CRTQ	62

Microbiology			
Subsection	**Name**	**Program Code**	**Page**
Bacteriology	Routine Microbiology Combination	RMC	176
Bacteriology	*Mycoplasma genitalium*, Molecular	MGEN	185
Virology	HSV, VZV—Molecular	ID5	198
Multidiscipline Microbiology	Infectious Disease, Pneumonia Panel	IDPN	203

Immunology and Flow Cytometry

Subsection	Name	Program Code	Page
Flow Cytometry	Flow Cytometry—Post-Immunotherapy Analysis	FL6	216

Transfusion Medicine, Viral Markers, and Parentage Testing

Subsection	Name	Program Code	Page
Transfusion Medicine	Antibody Titer—Automated	AABT, AABT1, AABT2, AABT3	224

Histocompatibility

Section	Name	Program Code	Page
Histocompatibility	Antibody Titer—Automated	AABT, AABT1, AABT2, AABT3	238

Anatomic Pathology

Subsection	Name	Program Code	Page
Surgical Pathology	CAP/NSH HistoQIP Central Nervous System IHC	HQNEU	272
Surgical Pathology	CAP/NSH HistoQIP In Situ Hybridization (Kappa/Lambda)	HQISH	272
Surgical Pathology	CAP/NSH HistoQIP Melanoma IHC	HQMEL	273
General Immunohistochemistry	Dermatopathology Immunohistochemistry	DPIHC	278
General Immunohistochemistry	c-Myc/Bcl-2 Immunohistochemistry Tissue Microarray	MYBC	279
Predictive Markers	CAP/ACMG *HER2* Gene Amplification by FISH, Interpretation Only	CYHI	282

2019 New Programs

Name	Program Code	Page
Quality Cross Check		
Quality Cross Check—Transfusion Medicine	JATQ	42
General Chemistry and Therapeutic Drug Monitoring		
Plasma Cardiac Markers International	PCARI	65
Fecal Calprotectin	FCAL	75
Endocrinology		
MMA and Active B_{12}	MMA	82
Toxicology		
Novel Opioids and Benzodiazepines	NOB	105
Blood Cannabinoids	THCB	106
Antifungal Drugs Monitoring	AFD	106
Accuracy-Based Programs		
Accuracy-Based Glucose, Insulin, and C-Peptide	ABGIC	115
Instrumentation Validation Tools		
C-Peptide/Insulin Calibration Verification/Linearity	LN46	131
Reproductive Medicine		
Postvasectomy Sperm Count—Automated	PV1	156
Microbiology		
Carbapenem-resistant Organisms	CRO	180
Molecular Vaginal Panel	MVP	185
Gastrointestinal Panel, 5 Challenge	GIP5	204
Transfusion Medicine, Viral Markers, and Parentage Testing		
Viral Markers—Series 6, Additional Material	VM6X	231
Genetics and Molecular Pathology		
CAP/ACMG Cardiomyopathy Sequencing Panel	CMSP	246
CAP/ACMG Inherited Cancer Sequencing Panel	ICSP	247
Anatomic Pathology		
HQIP Whole Slide Image Quality Improvement Program	HQWSI	274
CD30 Immunohistochemistry Tissue Microarray	CD30	279
p16 Immunohistochemistry Tissue Microarray	P16	279

2 Continuing Education

Simplify your record keeping with Competency Assessment Program.

Be ready for your next inspection:

- Use checklists and courses to document specific actions and dates.
- Meet deadlines with automated scheduled reminders.
- Upload supporting documentation for complete, organized records.
- Offer staff 80+ CE credits from included Competency Assessment courses.

Continuing Education

Continuing Education Programs 8
Competency Assessment Program 15
QM*Ed*™ Online Educational Courses 18

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, 88-89
Blood Gas	AQ, AQ2, AQ3, AQ4	Chemistry	92
Coagulation—Limited	CGB, CGL, CGDF	Coagulation	160
Cytogenetics	CY, CYBK	Cytogenetics	242
Hematology—Basic	HE, HEP	Hematology and Clinical Microscopy	136
Blood Cell Identification, Photographs	BCP, BCP2	Hematology and Clinical Microscopy	139
Hematology Automated Differential Series	FH1-FH4, FH6, FH9-10, FH13	Hematology and Clinical Microscopy	136
Virtual Peripheral Blood Smear	VPBS	Hematology and Clinical Microscopy	143
Bone Marrow Cell Differential	BMD	Hematology and Clinical Microscopy	139
CAP/NSH HistoQIP	HQIP	Histology	271
Immunology	IG, IGX, ANA, ASO, CRP, HCG, IM, RF, RFX, RUB, RUBX, IL, M, OLI, G, LPE, SPE, UBJP, RDS, CCP, S2, S4, S5, AHT	Immunology	74,76, 208-210, 212-214
Bacteriology	D	Microbiology	173
Mycology and Aerobic Actinomycetes	F	Microbiology	189
Limited Bacteriology	D1, D2, D3, D5, D6, D8, MC3, MC4, RMC	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
Toxicology	DFC, DMPM, SCDD, FTC, UDC, NOB, T	Toxicology	96, 99, 104-105, 107-108
Transfusion Medicine	J, J1, JE1, JAT, JATE1, EXM, EXM2	Transfusion Medicine	220-222

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			
QP201 - Technical Competency Assessment of Peripheral Blood Smears NEW	QP201	Data Analysis and Critique	25
QP202 - Red Blood Cell Utilization: Single and Double Unit Transfusions NEW	QP202	Data Analysis and Critique	26
QP203 - Inpatient Test Utilization and Volume Benchmarking NEW	QP203	Data Analysis and Critique	27
QP204 - Turnaround Time for Image-Guided Breast Needle Biopsy Specimens NEW	QP204	Data Analysis and Critique	28
Hematology and Clinical Microscopy			
Blood Cell Identification, Photographs	BCP, BCP2	Participant Summary	139
Bone Marrow Cell Differential	BMD	Participant Summary	139
Extended Virtual Peripheral Blood Smear	EHE1	Participant Summary	144
Hematology Automated Differential Series	FH1–FH13, FH1P–FH13P	Participant Summary	136
Hematology—Basic	HE, HEP	Participant Summary	136
Hemoglobinopathy	HG	Participant Summary	140
Virtual Body Fluid	VBF	Participant Summary	148
Virtual Peripheral Blood Smear	VPBS	Participant Summary	143
Clinical Microscopy	CMP, CMMP, CMP1	Participant Summary	146-147
Microbiology			
Blood Parasite	BP	Participant Summary/Final Critique	193
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	194
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	283
Clinical Pathology Improvement Program*	CPIP/CPIP1	15****	NA	Online	14
Digital Slide Program—Dermatopathology*	DPATH/DPATH1	15****	NA	Online (DigitalScope®)	267
Digital Slide Program in FNA*	FNA/FNA1	10	10	Online (DigitalScope)	290
Fine-Needle Aspiration Glass Slides	FNAG/FNAG1	10	10	Glass Slides	291
Forensic Pathology	FR/FR1	12.5****	12.5	Online	294
Hematopathology Online Education	HPATH/HPATH1	12.5****	12	Online (DigitalScope)	145
Nongynecologic Cytopathology Education**	NGC/NGC1	25	25	Glass Slides With Online Cases (DigitalScope)	289
Neuropathology Program	NP/NP1	10****	NA	Online (DigitalScope)	284
Gynecologic Cytopathology PAP Education Program***	PAPCE/APAPCE PAPJE/APAPJE PAPKE/APAPKE PAPLE/APAPLE PAPME/APAPME Series 1 or 2	8	8	Glass Slides	286
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	285
Performance Improvement Program in Surgical Pathology	PIP/PIP1	40	NA	Glass Slides	265

Continued on the next page

*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 continued

Program Name	Program Code	Maximum *AMA PRA CME Category 1 Credits™* Annually	Maximum CE Credits Annually	Format	Catalog Page
Online Performance Improvement Program in Surgical Pathology*	PIPW/PIPW1	40	NA	Online (DigitalScope)	264
Nongynecologic Cytopathology Intraoperative Touch Imprint/ Crush Preparation Program*	TICP/TICP1	10****	10	Online (DigitalScope)	288
Variant Interpretation Only Program	VIP/VIP1	3	3	Online	252
Virtual Biopsy Program*	VBP/VBP1	25****	NA	Online (DigitalScope)	266

*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 Programs (CPIP/CPIP1)

CPIP supports pathologists who principally practice clinical pathology as well as those who primarily practice anatomic pathology but cover clinical pathology. A diverse portfolio of real-life case scenarios, including images and clinical background, helps pathologists to stay abreast of issues and advances in the lab.

Designed for pathologists, by pathologists. Each case is developed and peer-reviewed ensuring what you learn is practical and easily applied to your work. Thought provoking questions with feedback and a multiple-choice post-test allow you to assess and confirm your diagnostic skills. Participants who earn a passing score on the post-test may apply their earned credits to the ABP's CC requirements.

Clinical Pathology Improvement Program CPIP/CPIP1

Program Name	Program Code	Cases/Year
	CPIP/CPIP1	
Online cases in clinical pathology	▮	12 (One per month. See below.)

Additional Information

Consider the CPIP program if you are a:

- Medical director seeking to continuously improve the clinical pathology knowledge and collective skills of your pathology team.
- Pathologist with clinical and/or laboratory management responsibilities.
- Pathologist seeking CME/SAM or CC credits in clinical pathology.
- Subspecialty clinical pathologist who needs to keep current.

To learn more visit www.cap.org and search CPIP.

Discipline	Case Schedule (subject to change)	Month 2020
Lab Management	How to retire a test	January
Toxicology	Non-cancer pain management	February
Hematology	Molecular approach to myeloid neoplasms	March
Chemistry	Growth hormone testing	April
Transfusion Medicine	Blood bank education for clinical staff	May
Hematology	Neutrophilia	June
Microbiology	Automation in clinical microbiology	July
Transfusion Medicine	Utilization of platelets and plasma	August
Hematology	Flow/lymphocytosis	September
Molecular Pathology	Cell-free and/or circulating tumor cell DNA testing for solid tumors	October
Chemistry	Adrenal function testing	November
Lab Management	Physician wellness	December

Program Information

- CPIP - One online clinical laboratory case per month
- CPIP1 - Reporting option with CME/SAM credit for each additional pathologist (within the same institution); 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.
- **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 Laboratory Professionals Learning Programs 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 2020 Release	July 2020 Release
Blood Banking/Transfusion Medicine—Generalist	Direct antiglobulin test	ABO typing discrepancies
Blood Banking/Transfusion Medicine—Specialist	Direct antiglobulin test	ABO typing discrepancies
Chemistry	Clinical toxicology	Electrolytes, acid base, and anion gap
Hematology and Coagulation	Erythrocyte morphology	White blood cell inclusions
Histology	Immunohistochemistry—part 2	Histology specimen handling
Immunology	Monitoring the testing process in immunology	Human chorionic gonadotropin and fetal fibronectin
Microbiology—Generalist	Genital tract pathogens	The microbiology of wounds
Microbiology—Specialist	Genital tract pathogens	The microbiology of wounds
Phlebotomy/Specimen Processing	Professionalism and ethics	Venipuncture
Point-of-Care Testing	Provider-performed microscopy and limited waived testing	Urine dipstick
Quality Programs/Management	Document control	New instrument method validation
Safety	Hazardous chemicals	Laboratory waste and spill management
Urinalysis/Body fluids	Microscopic urinalysis part 2—crystals and casts	Serous and synovial fluids

Pro Course Schedule

Discipline	January 2020 Release	July 2020 Release
Blood Banking/Transfusion Medicine	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	Immunohistochemistry—part 1
Immunology	Hepatitis testing	Rapid serology kit tests
Microbiology	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

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.

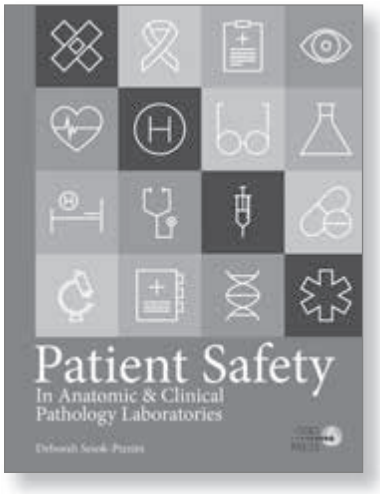
Connect the patient safety culture in your laboratory to the overall mission and goals of your health care enterprise.

- 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

Add Patient Safety In Anatomic & Clinical Pathology Laboratories (PUB316) to your order.

Or, view sample pages and purchase online:

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



Item number: PUB316
Softcover; 128 pages; 2017

QM*Ed*™ Online Educational Courses

Tailored education and quality tools developed with pathologist input

Quality Management Educational Resources (QM*Ed*) courses will help you:

- Build a quality management system (QMS) – one piece at a time – that sustains your continuous improvement and Lean efforts.
- Improve your processes and eliminate waste
- Self-assess your current QMS against international quality standards
- 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
- Measure, analyze, and set goals with senior management

Program information

- Courses are delivered online via a highly interactive user interface that allows you to learn at your own pace.
- Courses are licensed for one year, allow sharing of logins, and include continuing education (CE) credit.

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. Includes a unique Culture Assessment Tool that helps laboratory leadership get a picture of where your organization needs to improve and where it is strong. This tool helps make culture change a reality.

4 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. Includes the RCA Performance and Feedback Toolkit, a set of tools an organization can use to guide and assess root cause analysis projects. 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

This "how-to" course on document control systems details how to control documents in a way that meets ISO 15189 requirements, how to accomplish document control even with minimal resources (such as spreadsheets), and how document control contributes to cost containment. Audio recordings of the CAP's ISO 15189 assessors provide examples and commentary on common pitfalls and issues.

2 CE credits available

QMS Implementation Roadmap
Order ISOEDRM

Outlines the practical steps necessary to build, implement, and maintain a quality management system that meets the ISO 15189 standard. Video recordings of the CAP's ISO 15189 assessors provide perspective on best practices and pitfalls. Designed for laboratory quality managers, plus your implementation team members.

2 CE credits available

15189 Walkthrough
Order ISOEDWT

Designed for laboratory quality managers (along with your medical and administrative decision makers) considering implementation of an ISO 15189 program. Summarizes each section of the standard, while clarifying its intent and key requirements. See video recordings of the CAP's ISO 15189 assessors who offer context and examples of how technical problems relate to more fundamental deficiencies in the quality management system.

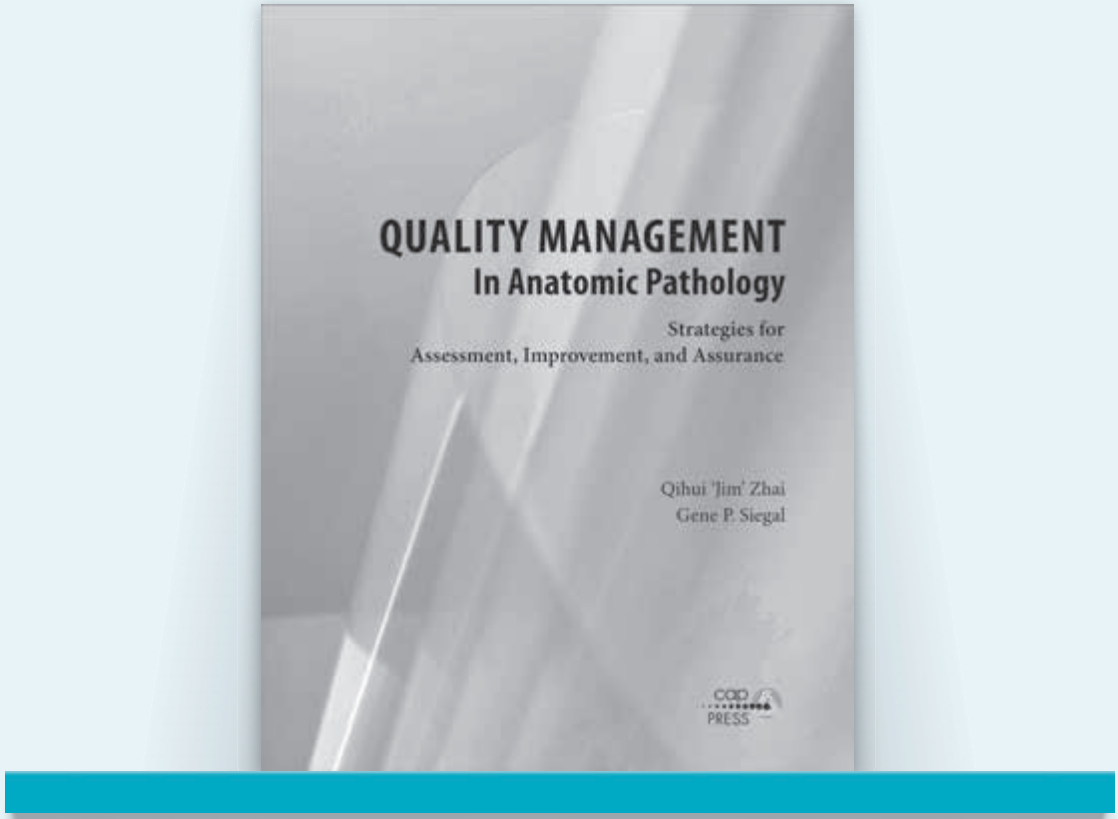
2 CE credits available

Make sure your laboratory team is ready to meet the challenges ahead. Add QM*Ed* courses to your order form.

Use code ISOEDAL to add the entire series for a 25% discount.

For more information, visit cap.org and search QM*Ed*.

How current is your laboratory quality management plan?



Created specifically for the needs of the anatomic pathology laboratory, this comprehensive manual can help you develop, implement, and maintain a comprehensive quality program. Learn valuable tips for designing your own laboratory quality plan that documents regulatory compliance. Text includes cross-references to the CAP's Laboratory Accreditation Program checklists, Joint Commission standards, and CLIA '88.

Quality Management In Anatomic Pathology

Item number: **PUB125**

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

ADD IT TO YOUR ORDER OR PURCHASE ONLINE.

Printed books at **estore.cap.org**

Ebooks at **ebooks.cap.org**

3 Quality Management Tools

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

- Assess technologist's competency of peripheral blood smears using online whole slide images (QP201).
- Audit your transfusion practices for appropriate use of blood products by assessing single versus double RBC unit transfusions (QP202).
- Benchmark your core laboratory test volume to support your test utilization initiatives (QP203).
- Benchmark your turnaround time for image-guided breast needle biopsy specimens (QP204).

Quality Management Tools

Q-PROBES™ 24
Q-TRACKS® 29
Clinical Pathology Monitors 31
Anatomic Pathology Monitor 37

New Programs NEW

Technical Competency Assessment of Peripheral Blood Smears (QP201) 25
Red Blood Cell Utilization: Single and Double Unit Transfusions (QP202) 26
Inpatient Test Utilization and Volume Benchmarking (QP203) 27
Turnaround Time for Image–Guided Breast Needle Biopsy Specimens (QP204) 28

Discontinued Programs

Technical Staffing Ratios (QP191)
Opioid Drug Testing Stewardship (QP192)
Expression Rates in Invasive Breast Carcinoma (QP193)
The Impact of Pathologist Review of Peripheral Blood Smears (QP194)

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 Competency Assessment of Peripheral Blood Smears (QP201) NEW		▮			▮		▮			▮	
Red Blood Cell Utilization: Single and Double Unit Transfusions (QP202) NEW	▮	▮	▮		▮		▮		▮		▮
Inpatient Test Utilization and Volume Benchmarking (QP203) NEW		▮			▮		▮	▮		▮	▮
Turnaround Time for Image–Guided Breast Needle Biopsy Specimens (QP204) 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

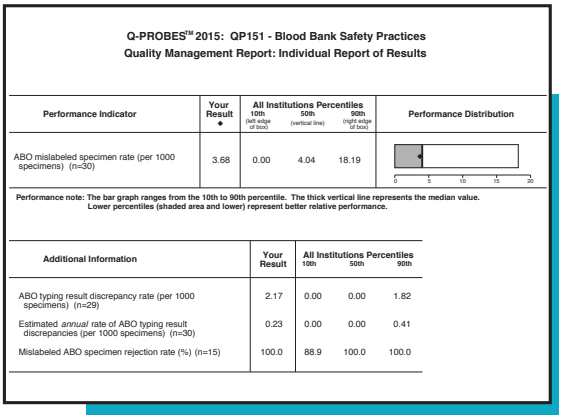
Implement quality monitoring—Use Q-PROBES short-term comprehensive quality studies[1] to learn how to start monitoring and measuring key processes that you may not have followed in the past or that are not commonly monitored in most laboratories. Q-PROBES studies analyze hot topics and industry trends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



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	0 5 10 15 20

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

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.

NEW

Technical Competency Assessment of Peripheral Blood Smears QP201

Introduction

The widespread use of automated white blood cell (WBC) differential counts and computer generated whole slide imaging has decreased the time that the technical staff dedicates to morphological assessment of blood cells. However, technologists must maintain their morphological skills and laboratories are required to provide education and assess competency in this area on a regular basis.

Participation in this Q-PROBES study helps laboratories meet CLIA personnel requirements (Subpart M, 42 CFR §493.1); CAP Laboratory Accreditation Program Checklist statements GEN.55500, Competency Assessment of Testing Personnel; and The Joint Commission Standards HR. 01.05.03, 01.06.01, and 01.07.01 for training and education, competency, and evaluation of hospital personnel.

Objectives

This study will help assess the effectiveness of educational and practical experience policies and procedures dedicated to the laboratory's efforts in maintaining technologist skills in the performance of accurate WBC differential counts and other peripheral blood smear morphological assessment. The evaluation provided will assist in the construction of individual educational programs for the technical staff and will highlight areas of improvement to focus on.

Data Collection

Information will be collected from each site regarding their institution's minimum qualification and experience requirements of their technologists, their ongoing educational programs in peripheral blood smear evaluation, as well as relevant procedures and policies.

A series of online, whole slide images of Wright-Giemsa stained peripheral blood smears using DigitalScope® technology will be available to each participating institution to assess technologists' performance on WBC differential counts and morphology assessment. Participants will also provide information about their competency assessment programs, continuing education, and professional background. Each program ordered provides input forms for use by up to 10 technologists. Laboratories that need forms for more than 10 individuals should order additional programs (available in multiples of 10).

Performance Indicators

- Individual technologist score (%) based on a standardized competency assessment method to determine a technologist's ability to identify various WBC types, red blood cell morphology, and platelet morphology in normal and abnormal cases
- Overall laboratory score based on the facility's individual technologist performance(s)

A summary of responses to the general questions will be provided to participants.

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

Red Blood Cell Utilization: Single and Double Unit Transfusions QP202

NEW

Introduction

The use of lower thresholds for transfusing red blood cells (RBC) has effectively reduced the number of RBC transfusions performed. When healthcare providers order a blood transfusion, they request the number of RBC units that should be transfused. Most orders are for either 1 (single) unit or 2 (double) units of RBC in non-emergent scenarios. This includes inpatient transfusions provided to acute and chronically ill patients, post-operative patients, and patients in intensive care unit settings. However, the need to transfuse 2 RBC units during a transfusion episode has been questioned because a single unit transfusion may sufficiently increase oxygen carrying capacity for most patients.

Enrollment in this study will assist laboratories in meeting the CAP Laboratory Accreditation Program Transfusion Checklist statement TRM.40875, Transfusion Service Medical Director Responsibility, regarding monitoring and auditing transfusion practices, and establishing criteria for transfusion. Use of this study assists laboratories in meeting and applying The Joint Commission Standards QSA.05.01.01 and 05.02.01 requirements for policies and procedures for blood transfusion services.

Objectives

This Q-PROBES study will allow participants to assess how frequently single RBC units are ordered and subsequently transfused to hospitalized patients requiring non-emergent transfusions compared to all transfusion events with either single or double RBC units ordered. Additionally, this study will allow participants to evaluate conformance of RBC transfusion practice with their own institutional guidelines.

Data Collection

Participants will identify up to 50 transfusion events from patients treated and received either 1 or 2 RBC unit(s). This study will be limited to hospital inpatients. Preoperative and intraoperative orders for surgical patients and emergency orders for RBC transfusion will be excluded. Orders for 3 or more RBC units will be excluded as these are often unstable patients requiring urgent transfusion.

For each of the eligible transfusion episodes, participants will record the pre-transfusion and post-transfusion hemoglobin levels and the type of ordering service.

Performance Indicators

- Percentage of single RBC transfusion events out of all transfusion events administering single or double RBC units during the study period
- Percentage of RBC transfusions in compliance with institutional guidelines during the study period

Additional Measure

- Average pre-RBC transfusion hemoglobin value

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

Inpatient Test Utilization and Volume Benchmarking QP203

NEW

Introduction

It is well established that test ordering practices vary widely between healthcare providers even when adjusted for similar patient populations and conditions. Similarly, ordering practices vary between healthcare facilities which depend, in part, on certain operational practices and policies. This may involve test menu configuration, ordering protocols, or restriction policies such as use of laboratory formularies. Another method to evaluate potential gaps in utilization practices is to evaluate adjusted volume of specific tests between facilities. This information can be useful to laboratories for prompting evaluation of potential factors associated with differences in the quantity of specific tests performed when compared to peers.

Objectives

The purpose of this study is to provide participants with comparative benchmarks involving annual volumes of various inpatient tests and number of inpatient days. The amount of testing performed per inpatient day will be used to adjust for ordering practice variability between facilities.

In addition, associations between standardized test volumes and ordering practices in use by participants, such as test menu design, reflex testing, decision support, standing orders, and order restriction policies, will be evaluated.

Data Collection

Participants will report the 2019 annual volume for specific inpatient tests including both common high volume tests as well as less commonly ordered low volume tests. Annual inpatient days will also be collected.

Other information such as whether the test is included on a panel will be collected in addition to information about general laboratory stewardship policies and procedures.

Performance Indicators

For each inpatient test:

- Annual inpatient test volume standardized by inpatient days
- Index score of standardized inpatient test volume

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

NEW

Turnaround Time for Image–Guided Breast Needle Biopsy Specimens QP204

Introduction

Needle biopsies are performed increasingly for the primary diagnosis of breast disease, particularly in patients with mammographic or ultrasound abnormalities suspicious for malignancy. In a typical workflow the radiologist incorporates the pathologic findings into the radiology report with correlation, requiring a rapid turnaround time for the pathology report in order to expedite patient care. As the goal of these procedures is to expedite surgical intervention in those patients requiring it, often with the assistance of a nurse navigator, many institutions track the turnaround times for biopsy submission, pathologist and radiologist verification of their respective reports, and time to surgery. Notably, there are no established pathology benchmarks for breast needle biopsy turnaround time.

Objectives

The aims of this study are to:

- Determine the average turnaround time for image-guided breast needle biopsy specimens, defined as the time from specimen accessioning in the laboratory to verification and release of the final report by the pathologist
- Identify key elements of processing and reporting that influence the turnaround time, including the American Society of Clinical Oncology/College of American Pathologists guideline for at least six hours of formalin fixation, the relative complexity of establishing benign, atypical/borderline, and malignant diagnoses, and the frequent need for additional studies, including additional deeper sections, immunohistochemistry, and intradepartmental consultation

Data Collection

Participants will submit data from up to 50 image-guided breast needle biopsy specimens received during the study period, including the time of biopsy (when available), the time the specimen was accessioned in the laboratory, the duration of formalin fixation, and all non-routine studies obtained on the case, as outlined in the objectives above. The final pathologic diagnosis will also be recorded in order to stratify turnaround times with regard to benign, atypical/borderline, and malignant diagnoses, if sufficient data is provided.

Performance Indicator

- Time from specimen accessioning in the laboratory to final pathologist report

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

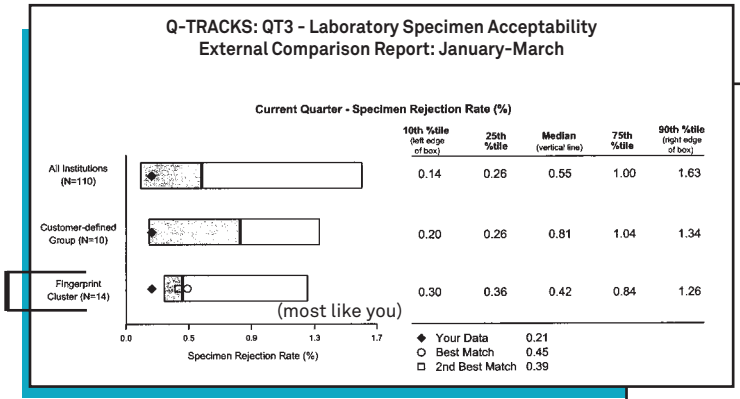
Use established Q-TRACKS programs to identify opportunities to quantitate your quality improvement measures.

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.

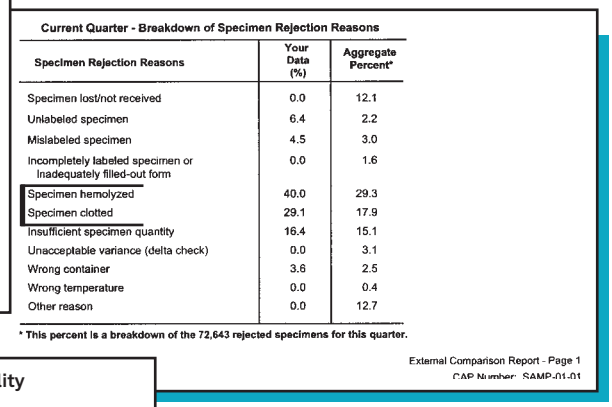
Step 1:

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



Step 2:

Identify improvement opportunities.

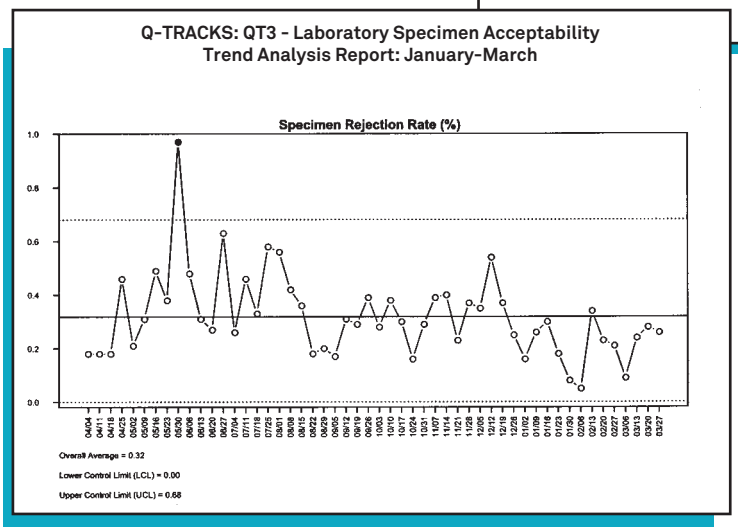


Current Quarter - Breakdown of Specimen Rejection Reasons

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
CAP Number: SAMP-01-01



Step 3:

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

Participants in Q-TRACKS programs 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.

Laboratory Administration for Pathologists, Second Edition (PUB312)

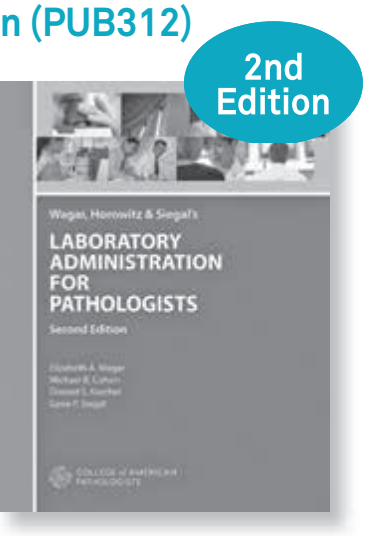
Laboratory Administration for Pathologists is designed to provide pathologists with an overview of the fundamentals of management and leadership, addressing the specific role and responsibility of the pathologist in directing the laboratory.

- Provides information for both clinical and anatomic pathology practice
- Includes an overview of patient safety not available in the first edition
- Covers financial management of the laboratory and the pathology practice
- Geared for trainees and those entering practice while appropriate for all pathologists

Add it to your order.

Or, view sample pages and purchase online:

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



Item number: PUB312
Hardcover; 296 pages; 2019

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 The 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 healthcare system. More ominously, systemic wastage of blood may reflect an environment of care that is out of control and may pose risks to patient safety.

Enrollment in this program assists laboratories in meeting regulatory requirements as follows:

- CAP Laboratory Accreditation Program Checklist statements: TRM.40875 that requires the transfusion service medical director to monitor and audit transfusion practices to ensure the appropriate use of blood; TRM.30800, Disposition Records; and TRM.32275, Component Records, regarding recording the use of each blood or component product from receipt to final disposition.
- The Joint Commission Standards QSA.05.02.01, adequate blood and blood components; QSA.05.03.03, requirements for policies and procedures for returning unused blood products to blood transfusion services; and QSA.05.22.01, records of blood product disposition.
- 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: whole blood (allogeneic), 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 laboratory service hours, waiting time, comfort level, professionalism and courtesy, and privacy.

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 Professionalism and 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 (National Patient Safety Goal NPSG.02.03.01), 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.

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 was 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.

Objectives

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 and extra test orders, missing test orders and diagnosis codes, 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.

Unbind your competency assessment efforts.

Traditionally, documenting competency assessment meant shelves of three-ring binders. No more. With the Competency Assessment Program from the College of American Pathologists, all your documentation is right on your computer, instantly available at any time.

2020 Competency Assessment Program subscription includes:

- Updated assessment and training courses in 11 laboratory disciplines
- Customizable courses and checklists
- Online tools including assignments by team and shift, progress dashboards, and automated reminders

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 Quality Cross Check—Transfusion Medicine program (JATQ).

New Programs NEW

Quality Cross Check—Cardiac Markers (CRTQ).....42

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

Quality Cross Check—Cardiac Markers CRTQ NEW

Analyte	Program Code	Challenges per Shipment
	CRTQ	
CK-MB, immunochemical	▮	3
Myoglobin	▮	3
Troponin I	▮	3

This program does not meet regulatory requirements for proficiency testing; see Survey CRT on page 62. For additional information about the Quality Cross Check program, see page 40.

Program Information

- Three 2.0-mL liquid serum specimens
- 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

It is not appropriate to report hemoglobin or hematocrit by co-oximetry in this program.

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 138
- 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, MAXM, STKS, Unicel DxH series		▮		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 141. 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

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:

- What Did You REALLY Mean...How to Write a "Good" Deficiency
- Identifying Systemic Issues—Critical Role of the Inspection Team Leader
- Inspecting Method Validation/Verification Studies
- Inspecting Personnel Records
- 12 Inspector Tools to Make Your Inspection Go More Smoothly
- Proficiency Testing Referral and Communications

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

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	▮	2
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, two 1.0-mL plasma specimens, and one 2.0-mL serum specimen
- Report up to three instruments
- Two shipments per year

So You're Going to Collect a Blood Specimen (PUB225)

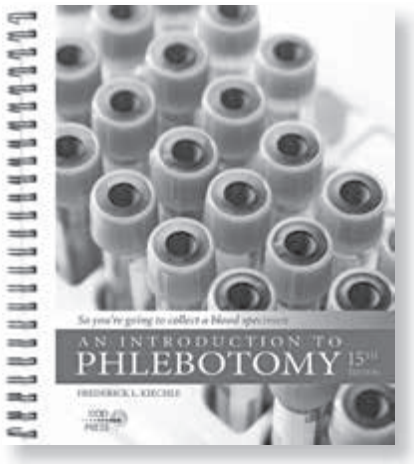
Up to 70% of laboratory errors occur prior to sample analysis and testing. Ensure everyone on your team is equipped to procure a quality blood specimen with this modern update to the classic reference guide.

- 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

Buy multiple copies and save. Call 800-323-4040 option 1 (Country Code 001).

Or, view sample pages and purchase online:

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



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

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

Instrument/Cartridge	Program Code					Challenges per Shipment
	CTQ	CT1Q	CT2Q	CT3Q	CT5Q	
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

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.

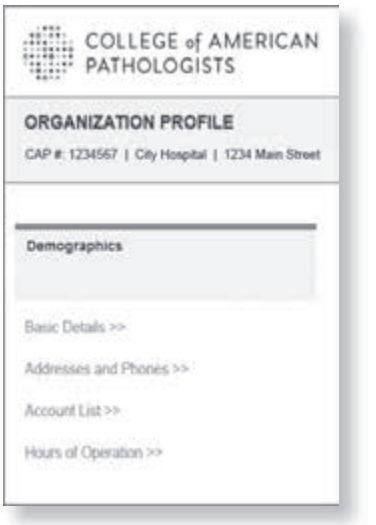
Program Information

- 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

Ensure your laboratory's information is up-to-date.

The CAP's online Organizational Profile tool ensures your laboratory's information is current to alleviate any issues with your proficiency testing and accreditation procedures. No more mailing forms or experiencing delays in processing—information is recorded in real time.

Log into e-LAB Solutions Suite to review and update your laboratory's information.



Transfusion Medicine

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 221. 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:

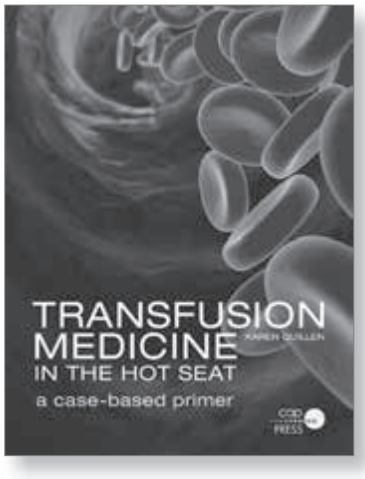
- Antibodies
- Blood Components
- Complications

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

Add it to your order.

Or, view sample pages and purchase online:

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



Item number: PUB224
Softcover; 123 pages

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 proficiency testing 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.

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 Hemoglobin 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
- Each program provides 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+
- Each program provides material to test up to five staff
- Shipments available upon request

6 General Chemistry and Therapeutic Drug Monitoring

Monitor performance of cardiac marker testing across multiple instruments with Quality Cross Check—Cardiac Markers (CRTQ).

- Test multiple instruments at one time—Quality Cross Check is not PT and not subject to CMS restrictions.
- Simplify biannual instrument comparability studies—receive customized reports that include peer group evaluations and instrument comparability statistics.

General Chemistry and Therapeutic Drug Monitoring

General Chemistry and Therapeutic Drug Monitoring 56
Urine Chemistry 68
Special Chemistry 71

New Programs NEW

Quality Cross Check—Cardiac Markers (CRTQ) 62

Discontinued Programs

Sweat Analysis Series (SW3)

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
Triiodothyronine (T3), free	▮	▮		▮		5
Triiodothyronine (T3), 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 58

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	
Thyroxine (T4), free	▮	▮		▮		5
Thyroxine (T4), 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 58

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, below

CE credit

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

Harmonized Thyroid ABTH

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

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.*

Program Information

- Three 1.0-mL frozen human serum specimens
- 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

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

Program Information

- Three 2.0-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

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

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.

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

Quality Cross Check—Cardiac Markers CRTQ

NEW

Analyte	Program Code	Challenges per Shipment
	CRTQ	
CK-MB, immunochemical	▮	3
Myoglobin	▮	3
Troponin I	▮	3

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

Program Information

- Three 2.0-mL liquid serum specimens
- 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.

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

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 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	
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 0.29-mL liquid plasma specimens for use with Quidel Triage Cardio 2, Cardio 3, and Troponin I panels
- 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	64
	HDL cholesterol		64
	Triglycerides		64
	Glucose		64
Whole blood cholesterol meters	Cholesterol	C1, C4, LCW	56-57, 64
Whole blood glucose meters	Glucose	HCC2, WBGQ	66, 67
Nova StatSensor®/ StatSensor Xpress™	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/StatSensor Xpress
- 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.

Program Information

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

CE credit

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.

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

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
- One mailing per year will include an additional specimen for uric acid testing

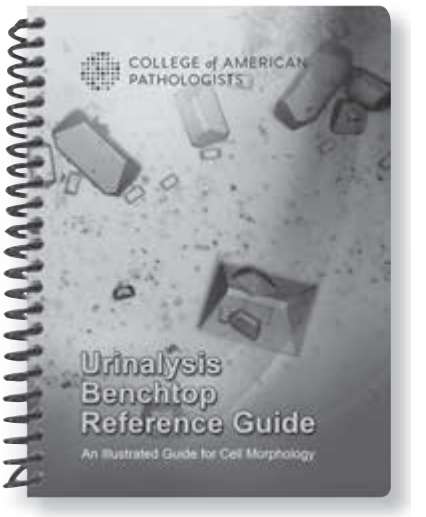
Urinalysis Benchtop Reference Guide (UABRG)

- Thirty-four different cell identifications, including common and rare cells
- Detailed descriptions for each cell morphology
- Eight tabbed sections for easy reference
- A durable and water-resistant format to withstand years of benchtop use—5” x 6½”

Add it to your order.

Or, view sample pages and purchase online:

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



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

Ensure your laboratory's information is up-to-date.

The CAP's online Organizational Profile tool ensures your laboratory's information is current to alleviate any issues with your proficiency testing and accreditation procedures. No more mailing forms or experiencing delays in processing—information is recorded in real time.

Log into e-LAB Solutions Suite to review and update your laboratory's information.

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

Program Information

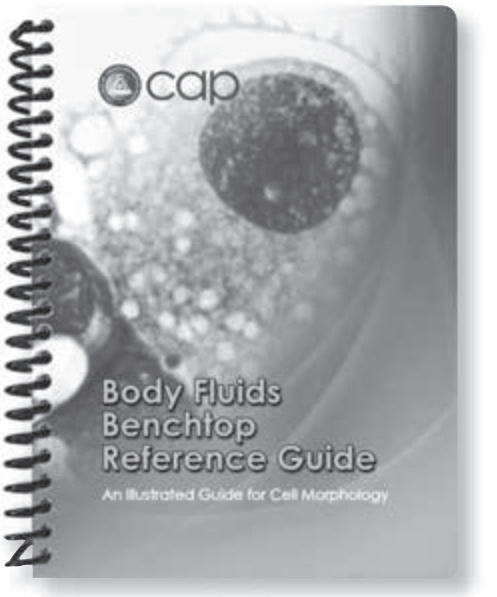
- Three 3.0-mL simulated liquid body fluid specimens
- Conventional and International System of Units (SI) reporting offered
- Two shipments per year

Additional Information

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

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”



Add it to your order.

Or, view sample pages and purchase online:

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

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

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 and Oligoclonal Bands 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; one educational pattern interpretation dry challenge and three educational activities to calculate CSF IgG index and synthesis rate each mailing
- 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

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 specimens
- 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
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, SW4

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

For method compatibility, see chart below.

Program Information

- SW1, SW2, SW4 - 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	SW4	
Orion direct electrode	▮			Precut 2-cm diameter Whatman filter papers
Wescor Macroduct™ and Nanoduct® Systems		▮		22-gauge blunt-tipped needles
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

Help pathologists stay current with rapidly changing issues in clinical pathology.

The **Clinical Pathology Improvement Program (CPIP)** provides peer-reviewed, interactive, case-based learning activities that cover a diverse portfolio of real-life clinical scenarios. Every month, you receive a new online module with images and clinical details that unfold as you solve the case in real time. Earn CME/SAM credits upon successful completion of the posttest.

Add CPIP/CPIP1 to your Surveys order.

7 Endocrinology

Be confident in the accuracy of your C-peptide and insulin testing.

- Test your results against reference method targets with the Accuracy-Based Glucose, Insulin, and C-Peptide (ABGIC) program.
- Identify instrument issues *before* they impact patient results with the C-Peptide/Insulin Calibration Verification/Linearity (LN46) program.

New Analyte Additions NEW

Accuracy-Based Vitamin D (ABVD) 85

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
Triiodothyronine (T3), free	▮		3
Triiodothyronine (T3), total	▮		5
T3 uptake and related tests	▮		5
Thyroxine (T4), free	▮		5
Thyroxine (T4), 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

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

Program Information

- Three 1.0-mL lyophilized 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
Calcium NEW	▮	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

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

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

Additional Information

- Target values are based upon the isotope-dilution gas chromatography-mass spectrometry reference measurement procedure for glucose performed by the CDC Reference Laboratory, Division of Laboratory Sciences, Centers for Disease Control and Prevention (Atlanta, GA).
- Target values for C-peptide are established by isotope-dilution mass spectrometry, performed at the University of Missouri, Diabetes Diagnostic Laboratory.

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

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

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

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 - Three 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:

- What Did You REALLY Mean...How to Write a "Good" Deficiency
- Identifying Systemic Issues—Critical Role of the Inspection Team Leader
- Inspecting Method Validation/Verification Studies
- Inspecting Personnel Records
- 12 Inspector Tools to Make Your Inspection Go More Smoothly
- Proficiency Testing Referral and Communications

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

8 Blood Gas, Critical Care, and Oximetry

Our programs closely mimic patient testing to ensure accuracy.

- Test specimen levels that reflect clinical decision points.
- Keep current with the latest laboratory best practices with educational content supplied in our participant summary reports.
- Gain confidence in your results by comparing performance against the largest peer groups.

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
pCO_2	▮	▮	▮	▮	5
pH	▮	▮	▮	▮	5
pO_2	▮	▮	▮	▮	5
Potassium	▮	▮	▮	▮	5
Sodium	▮	▮	▮	▮	5
tCO_2	▮	▮	▮	▮	5
Creatinine		▮		▮	5
Glucose		▮		▮	5
Urea nitrogen (BUN)		▮		▮	5

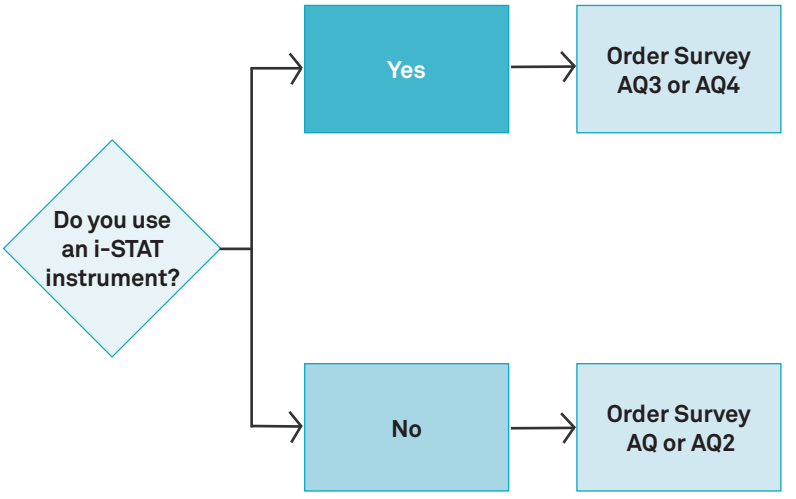
For second instrument reporting options, see the Quality Cross Check programs, AQQ, AQ2Q, AQ3Q, and AQ4Q, on page 93.

It is not appropriate to report hemoglobin and hematocrit results by co-oximetry in this Survey.

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

CE credit



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

It is not appropriate to report hemoglobin or hematocrit by co-oximetry in this program.

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

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.

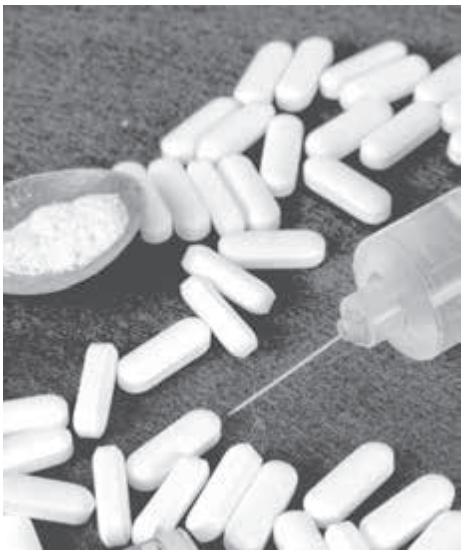
Program Information

- 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

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



Toxicology testing is changing at a rapid pace—so is our proficiency testing.

Introducing new programs for forensic toxicology and toxicology laboratories that perform:

- Qualitative and/or quantitative analysis of synthetic opioids and benzodiazepines in whole blood (NOB)
- Qualitative and/or quantitative analysis of cannabinoids in whole blood (THCB)

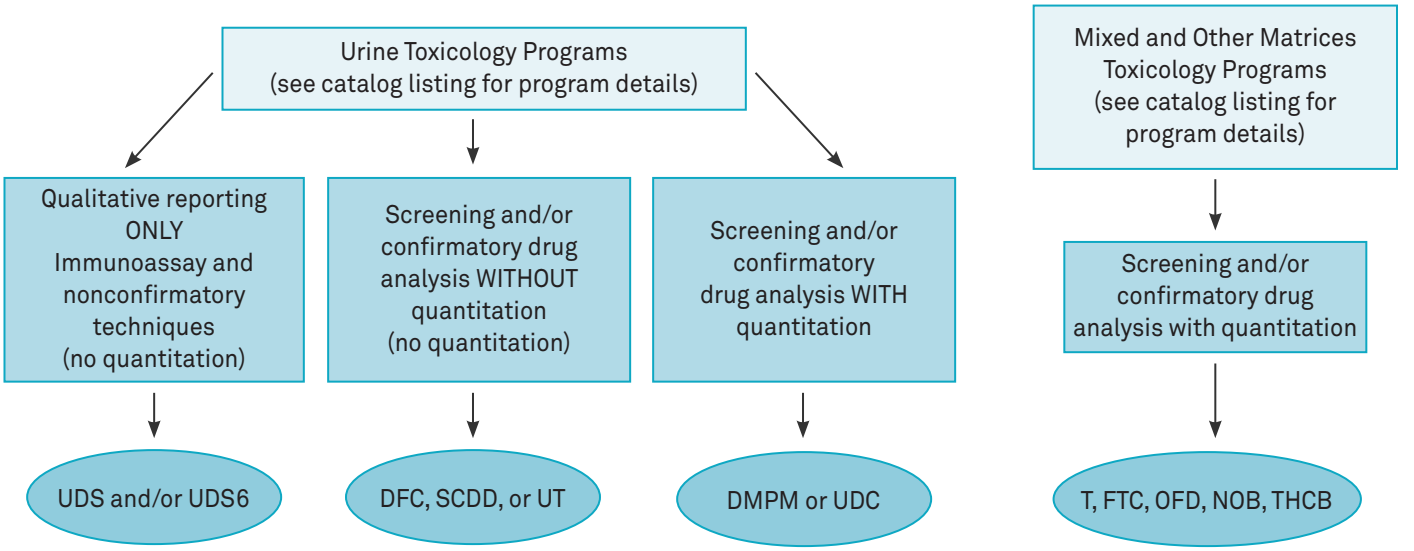
New Analyte/Drug Additions NEW

Toxicology (T) 96
Urine Toxicology (UT) 96
CAP/AACC Urine Drug Testing, Screening (UDS) 98
CAP/AACC Urine Drug Testing, Screening, Limited (UDS6) 98
CAP/AACC Forensic Urine Drug Testing, Confirmatory (UDC) 99
Oral Fluid for Drugs of Abuse (OFD) 100
Forensic Toxicology, Criminalistics (FTC) 104
Drug Monitoring for Pain Management (DMPM) 107
Drug-Facilitated Crime (DFC) 108

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

CE credit

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
Demoxepam NEW
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
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
Meprobamate/Carisoprodol NEW	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
Tramadol NEW	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
Fentanyl NEW	▮	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
Norfentanyl NEW	▮	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

CE credit 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
Fentanyl and/or metabolite NEW	▮	5
Fentanyl NEW	▮	5
Norfentanyl NEW	▮	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

CE credit

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
O-desmethyltramadol NEW
Oxazepam
Oxycodone
Oxymorphone
Paroxetine
Pentobarbital NEW
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 10.0-mL urine specimens
- For laboratories that perform screening and confirmatory testing for the compounds found in this program
- Two shipments per year

CE credit

SCDD Program Drug Listing

Challenges will include a mix of drugs.

For the most current list of drugs, 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.

Novel Opioids and Benzodiazepines NOB

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

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

CE credit

NOB Program Drug Listing

Challenges will include a mix of drugs.

For the most current list of drugs, 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.

Blood Cannabinoids THCB

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

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

Program Information

- Three 2.0-mL serum specimens
- For laboratories performing quantitative analysis of antifungal agents
- Two shipments per year

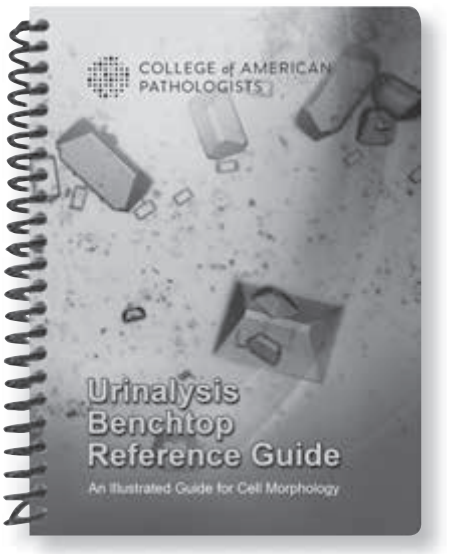
Urinalysis Benchtop Reference Guide (UABRG)

- 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” x 6½”

Add it to your order.

Or, view sample pages and purchase online:

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



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

CE credit

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
l-Methamphetamine
Lorazepam
Lorazepam glucuronide
Meperidine
Meperidine and/or metabolites
Meprobamate
Methadone
Methadone metabolite (EDDP)
Methamphetamine
Methylenedioxyamphetamine (MDA)
Methylenedioxymethamphetamine (MDMA)
Morphine
N-desmethyltramadol
Norbuprenorphine
Nordiazepam
Norhydrocodone NEW
Norfentanyl
Normeperidine
Noroxycodone
Noroxymorphone
Norpropoxyphene
O-desmethyltramadol
Opiate group
Oxazepam
Oxycodone
Oxymorphone
Phenobarbital
Pregabalin
Propoxyphene
Propoxyphene and/or metabolites
Tapentadol
Tapentadol-O-sulfate
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

CE credit

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
Bromazepam NEW
Brompheniramine
Butalbital
Carisoprodol
Chlorpheniramine
Citalopram/escitalopram
Clobazam NEW
Clonidine
Codeine
Cyclobenzaprine
Delta-9-THC-COOH
Desipramine
Dextromethorphan
Diphenhydramine
Doxepin
Doxylamine
Estazolam NEW
Fentanyl
Fluoxetine
Gabapentin NEW
Gamma hydroxybutyrate (GHB)
Hydrocodone
Hydromorphone
Hydroxyzine NEW
Imipramine
Ketamine
Lorazepam
Meperidine
Meprobamate
Methadone
Methadone metabolite (EDDP)
Methamphetamine
Methylenedioxyamphetamine (MDA)
Methylenedioxymethamphetamine (MDMA)
Midazolam NEW
Morphine
Norbuprenorphine NEW
Nordoxepin
Norfluoxetine
Norketamine
Normeperidine
Norpropoxyphene
Norsertraline
Nortriptyline
Norvenlafaxine NEW
O-desmethyltramadol NEW
Oxazepam
Oxycodone
Oxymorphone
Paroxetine
Pentobarbital
Phencyclidine (PCP)
Phenobarbital
Phenytoin
Propoxyphene
Quetiapine NEW
Scopolamine
Secobarbital
Sertraline
Tapentadol NEW
Temazepam
Tetrahydrozoline
Topiramate NEW
Tramadol
Trazodone metabolite (m-CPP) NEW
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 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.

Toxicology, Validated Material

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

Program Information

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

Clinical Toxicology Testing: A Guide for Laboratory Professionals, Second Edition (PUB227)

This book is a practical guide, written for pathologists, to directing hospital toxicology laboratory operations. This new edition features expanded sections on testing in the clinical setting, methodologies, and more user-friendly information on specific analytes. It provides the reader with a comprehensive view of what is needed—and expected—when offering a clinical toxicology service.

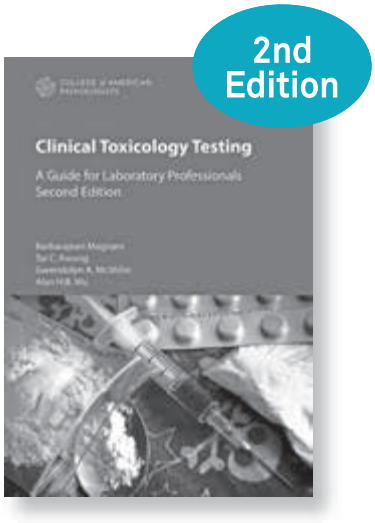
Contents include:

- Toxicology testing in the clinical setting, including new chapters on pediatric testing and chronic opioid therapy
- Toxicokinetics and methodologies, with new and expanded information on laboratory-developed tests, screening assays, targeted tests, and oral fluids and alternative matrices
- Specific analytes, including novel psychoactive substances and the use of medical cannabis
- Appendices on such useful topics as urine and serum screens, therapeutic drug monitoring, and proficiency testing

Add it to your order.

Or, view sample pages and purchase online:

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



Item number: PUB227
Softcover; 2019

Are you ready for your CAP inspection?

The CAP Accreditation Readiness Assessment (CARA®) is an on-site evaluation and education program for laboratories just beginning their pursuit of CAP accreditation.

CARA focuses on:

- Facilitating an in-depth understanding of CAP requirements as they apply to your laboratory
- Helping you manage the time and resources necessary for compliance with CAP accreditation requirements and preparation for your initial inspection
- Delivering on-site education when you're ready for it

Leverage the expertise of the world's most respected pathology organization.

"The Readiness Assessment [CARA] helped our lab immediately spot potential problems before our inspection. Our CAP inspection went like clockwork."

– Laboratory Director

Email us at readiness-assessment@cap.org to accelerate your quality journey.

10 Accuracy-Based Programs

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.

Accuracy-Based Programs

Accuracy-Based Programs 112
Validated Materials 116

New Analyte Additions NEW

Accuracy-Based Vitamin D (ABVD) 112

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
Calcium NEW	▮	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

Accuracy-Based Testosterone, Estradiol ABS

Analyte	Program Code	Challenges per Shipment
	ABS	
Albumin	▮	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)	▮	

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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	
Triiodothyronine (T3), free	▮	3
Triiodothyronine (T3), total	▮	3
Thyroxine (T4), free	▮	3
Thyroxine (T4), total	▮	3
Thyroid-stimulating hormone (TSH)	▮	3

Program Information
- Three 1.0-mL frozen human serum 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.

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

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

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

Additional Information

- Target values are based upon the isotope-dilution gas chromatography-mass spectrometry reference measurement procedure for glucose performed by the CDC Reference Laboratory, Division of Laboratory Sciences, Centers for Disease Control and Prevention (Atlanta, GA).
- Target values for C-peptide are established by isotope-dilution mass spectrometry, performed at the University of Missouri, Diabetes Diagnostic Laboratory.

Program Information

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

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 instrument calibration by using peer group data for a broader view beyond your laboratory.
- **Customized report package**—Let our team of biostatisticians perform the statistical analysis of your results so you do not have to.
- **Expedited results**—View your linearity evaluation for most CVL programs within two business days of data submission.

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

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

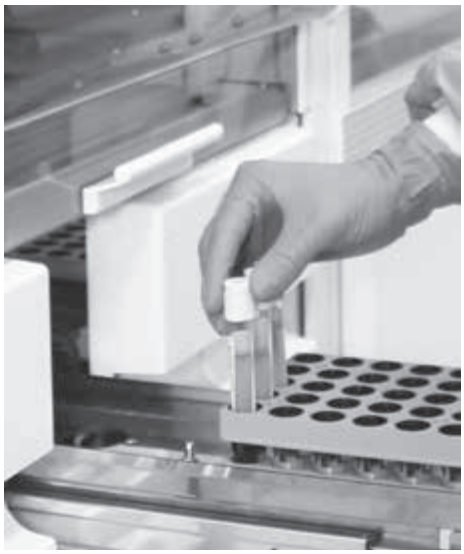
Endocrinology, Validated Materials

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, Screening	UDSM	UDS	98

11 Instrumentation Verification Tools



Access your expedited linearity results.

- Expedited linearity evaluations are complimentary and available for most Calibration Verification/ Linearity programs.
- You can view your linearity evaluations within two business days by logging into e-LAB Solutions Suite.

Instrumentation Verification Tools

Calibration Verification/Linearity 118
Instrumentation Quality Management Programs..... 132

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. View your linearity evaluations within two business days of submission 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 into 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	208
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	208
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	141
LN20 - Urine Albumin CVL	126	U	68
LN21 - High-Sensitivity C-Reactive Protein CVL	126	HSCRP	64
LN22 - Flow Cytometry CVL	126	FL	215
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	128	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	129	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	130	VLS, VLS2	199
LN39 - HIV Viral Load CVL	130	HIVG, HV2	199
LN40 - Vitamin D CVL	130	VITD	84
LN41 - Procalcitonin CVL	130	PCT	77
LN42 - D-Dimer CVL	131	CGL, CGDF	160
LN43 - Lamellar Body Count CVL	131	LBC	151
LN44 - Fibrinogen CVL	131	CGL	160
LN45 - HCV Viral Load CVL	130	HCV2	198
LN46 - C-Peptide/Insulin CVL	131	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	▮	7–42			mmol/L
Creatinine	▮	0.8–34.0			mg/dL
Glucose	▮	20–750			mg/dL
Iron	▮	10–950			µg/dL
Magnesium	▮	0.3–9.0			mg/dL
Osmolality	▮	200–600			mOsm/kg H_2O
Phosphorus	▮	0.5–22.0			mg/dL
Potassium	▮	1.5–13.0			mmol/L
Protein	▮	1.5–12.0			g/dL
Sodium	▮	65–195			mmol/L
Urea nitrogen/Urea	▮	5–170			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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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	
Triiodothyronine (T3), total	▮	0.5–7.0 ng/mL	
Thyroxine (T4), total	▮	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.

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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	▮	10–4,200 x 10^9/L
RBC count	▮	0.3–7.5 x 10^{12}/L
WBC count	▮	0.5–350.0 x 10^9/L

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

- LN13, LN13C - 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
- LN13, LN13C - 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.

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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%		

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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)	▮	

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

For LN27, view your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

Program Information
- LN25 - Seven 2.0-mL liquid serum specimens
- LN27 - Six 2.0-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.

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

Program Information
- Seven 1.0-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.

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

Program Information

- Seven 3.0-mL liquid serum specimens
- 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.

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

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.

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.

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

Program Information

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

Procalcitonin Calibration Verification/Linearity LN41

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

Program Information

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

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.

D-Dimer Calibration Verification/Linearity LN42

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

Lamellar Body Count Calibration Verification/Linearity LN43

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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	LN44 Target Range
Fibrinogen	▮	80–900 mg/dL

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

Program Information
- Seven 2.0-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.

Instrumentation 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, 2020.

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

Color Atlas of Hematology, Second Edition (PUB222)

The second edition of *Color Atlas of Hematology* goes far beyond other reference texts, delivering keen insight into peripheral blood pathology.

Explore 480 highly visual pages for the latest details on a range of issues including molecular and cytogenetics, flow cytometry, pediatric hematology, and leukemia. Link to 18 engaging videos prepared by the authors. View 100+ peripheral blood smears online with DigitalScope® technology, just like they were under the microscope—only better.

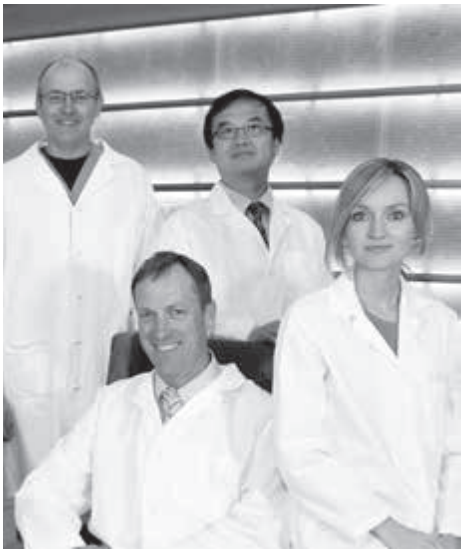
Add it to your order.

Or, view sample pages and purchase online:

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

Item number: PUB222
Hardcover; 480 pages; 2019

12 Hematology and Clinical Microscopy



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.

Hematology and Clinical Microscopy

Hematology 136
Clinical Microscopy 146

Discontinued Programs

Hematology Automated Differential (FH14, FH14P)

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)/ Reticulated platelet (RP)	▮	▮			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 137.

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 138
- 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.

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 138
- 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.

Hematology Automated Differential Series, Instrument Matrix

Instrument	FH and FHQ Series									
	FH1	FH2	FH3/ FH3Q	FH4/ FH4Q	FH6	FH6Q	FH9/ FH9Q	FH10	FH13	FH15
Abbott Cell-Dyn® 1200, 1400, 1600, 1700, 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 2/8/10/16, 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, 3500, 3700, 4000, Ruby™, Sapphire™			▮							
Biosystems SA (HA3/HA5)			▮							
Cell-DYN Emerald 22/AL			▮							
Coulter DxH 500 series			▮							
Drew Scientific Excell 22, 2280			▮							
Orphee Mythic 18, 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 series (except DxH500)						▮			▮	
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 series			▮		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
- 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, MAXM, STKS, Unicel DxH series		▮		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.

Reticulocyte, Matrix

Program	Reticulocyte count, percent	Absolute reticulocyte count	Immature Reticulocyte Fraction (IRF)	Reticulocyte Hemoglobin Concentration (CHr)	Reticulocyte Hemoglobin (RET-He)
RT/RTQ	▮	▮	▮	▮	
RT2	▮	▮			
RT3/RT3Q	▮	▮	▮		
RT4/RT4Q	▮	▮	▮		▮

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

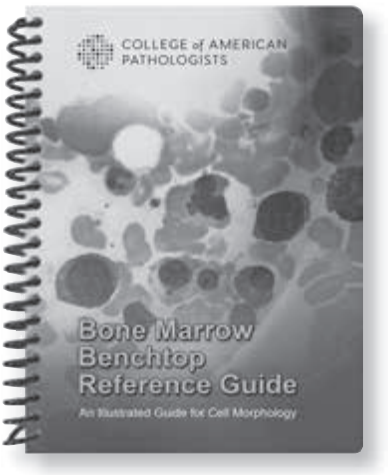
Bone Marrow Benchtop Reference Guide (BMBRG)

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.

Add it to your order.

Or, view sample pages and purchase online:

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



Item number: BMBRG
Spiral bound; 2018

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 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

CE credit

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

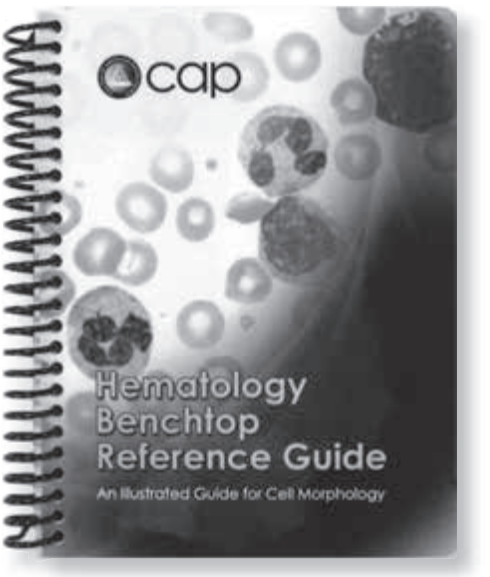
Hematology Benchtop Reference Guide (HBRG)

- 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”

Add it to your order.

Or, view sample pages and purchase online:

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



Item number: HBRG
Spiral bound; 60 pages;
50+ images; 2012

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.

- 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 for urinalysis; six images, each available as photographs and online images
- Two shipments per year

Additional Information

For second instrument reporting options, see the Quality Cross Check program, CMQ, on page 147.

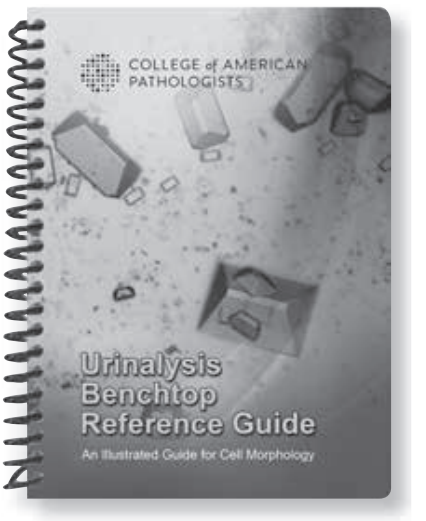
Urinalysis Benchtop Reference Guide (UABRG)

- Thirty-four different cell identifications, including common and rare cells
- Detailed descriptions for each cell morphology
- Eight tabbed sections for easy reference
- A durable and water-resistant format to withstand years of benchtop use—5” x 6½”

Add it to your order.

Or, view sample pages and purchase online:

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



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

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, or 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 series		▮	
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

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 Urine Microscopy, Instrument Matrix

Instrument	UAA, UAA1	
	UAA	UAA1
DIRUI FUS	X	
IRIS Iq200	X	
Roche cobas u701	X	
ARKRAY Auction Hybrid		X
77 Elektronika		X
Siemens Atellica UA5800		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 specimens
- 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

Placental Alpha Microglobulin 1 (PAMG-1) ROM1

Procedure	Program Code	Challenges per Shipment
	ROM1	
Placental Alpha Microglobulin 1 (PAMG-1)	▮	3

Program Information

- Three 0.5-mL simulated vaginal specimens for methods such as Actim PROM, Amnisure, Clinical Innovations, and PartoSure
- 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

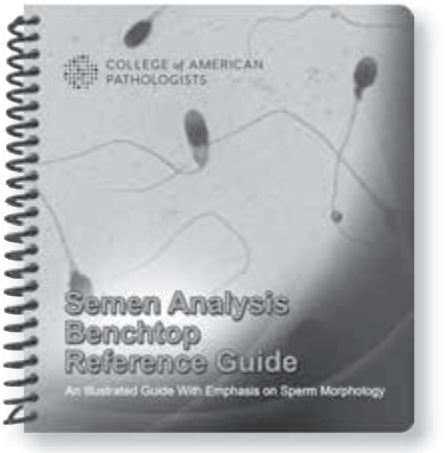
Semen Analysis Benchtop Reference Guide (SABRG)

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.

Add Semen Analysis Benchtop Reference Guide (SABRG) to your order.

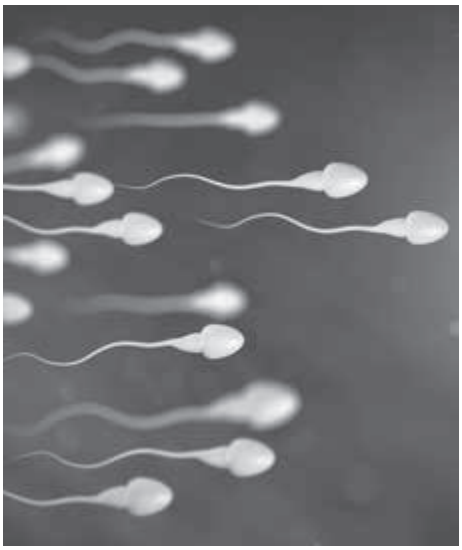
Or, view sample pages and purchase online:

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



Item number: SABRG
Spiral bound; 6½" x 7"; 2018

13 Reproductive Medicine



New PV1 program is designed for laboratories using automated analyzers for postvasectomy sperm count.

- Employs the same stabilized sperm specimens as the Postvasectomy for Manual Methods (PV) program, but with an increased volume.
- Allows you to test PV1 specimens using automated analyzers in the same mode used for patient samples, eliminating the need to run PT in manual mode.

Reproductive Medicine

Andrology and Embryology..... 156

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	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 - Online video clips of sperm available for hemocytometer, Makler, and disposable chambers
- SM1CD, SM2CD - Two online challenges that may be viewed as whole slide images by DigitalScope® technology or as static images
- Two online activites per year; your CAP shipping contact will be notified via email when the activity is available

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 online sets of five video clips
- Two online activites per year; your CAP shipping contact will be notified via email when the activity is available

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

Go ahead. Double check.

Rely on these Benchtop Reference Guides in your laboratory.

Hematology

Bone Marrow Benchtop Reference Guide (BMBRG)

Hematology Benchtop Reference Guide (HBRG)

Urinalysis Benchtop Reference Guide (UABRG)

Body Fluids Benchtop Reference Guide (BFBRG)

Microbiology

Mycology Benchtop Reference Guide (MBRG)

Parasitology Benchtop Reference Guide (PBRG)

Arthropod Benchtop Reference Guide (ABRG)

Gram Stain Benchtop Reference Guide (GSBRG)

Reproductive Medicine

Semen Analysis Benchtop Reference Guide (SABRG)

Ruggedly constructed, these handy, fully illustrated guides are built to withstand heavy use at the workbench.

ADD THEM TO YOUR ORDER OR PURCHASE ONLINE

Printed books at **estore.cap.org**

Ebooks at **ebooks.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).

Program Changes

Coagulation—Limited (CGL, CGDF) Additional analyte 160
Viscoelastometry (TEG) is now Viscoelastic Studies (VES) 166
Coagulation—Limited, Validated Material (CGM) Additional analyte 169

Discontinued Programs

Coagulation Special Testing Series (CGS6, CGS8)

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
Fibrin(ogen) degradation products, plasma		▮	▮	1
Fibrin(ogen) degradation products, serum		▮	▮	1

*Participants reporting INR results will receive a special evaluation to assess the INR calculation.

Additional Information

For second instrument reporting options, see the Quality Cross Check program, CGLQ, below.

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; two 1.0-mL plasma specimens and one 1.0-mL serum specimen; three shipments per year
- CGDF - One 1.0-mL serum specimen; two 1.0-mL lyophilized plasma specimens; three shipments per year

CE credit

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	▮	2
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, two 1.0-mL plasma specimens, 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 (three vials each)
- 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

Have you created or updated your own CAP Profile?

Each laboratory staff member should have their own profile. Your profile is transferable 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.

Coagulation Special Testing Series CGS1, CGS2, CGS3, CGS4, CGS5, CGS7

Module/Analyte	Challenges per Shipment					
	Program Code					
	CGS1	CGS2	CGS3	CGS4	CGS5	CGS7
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	
ADAMTS13 Module						
ADAMTS13 (activity, inhibitor screen, titer, and anti ADAMTS13 IgG)						3

*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
- 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	
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

Additional Information

For second instrument reporting options, see the Quality Cross Check programs CTQ-CT3Q and CT5Q, on page 165.

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

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

Instrument/Cartridge	Program Code					Challenges per Shipment
	CTQ	CT1Q	CT2Q	CT3Q	CT5Q	
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

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

Viscoelastic Studies VES

Instrument	Program Code	Challenges per Shipment
	VES	
TEG®5000, TEG6s, ROTEM®	▮	2

Program Information

- Two 1.0-mL lyophilized whole blood specimens with diluents
- 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.

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

Program Information

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

Fibrinogen Calibration Verification/Linearity LN44

Analyte	Program Code	
	LN44	LN 44 Target Range
Fibrinogen	▮	80–900 mg/dL

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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™	▮				
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					▮
Siemens Xprecia Stride				▮	

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, two 1.0-mL lyophilized plasma specimens, and one 1.0-mL serum specimen; three shipments per year

Can you spot them?

Accurately identify fungi, bugs, parasites, bacteria, and other microorganisms quickly. Ruggedly constructed, these fully illustrated guides are built to withstand heavy use at the workbench. Spiral-bound and laminated, they are conveniently sized at 6 1/2" x 7".

Rely on these Benchtop Reference Guides in your laboratory.

- Arthropod Benchtop Reference Guide (ABRG)
- Gram Stain Benchtop Reference Guide (GSBRG)
- Mycology Benchtop Reference Guide (MBRG)
- Parasitology Benchtop Reference Guide (PBRG)

ADD THEM TO YOUR ORDER OR PURCHASE THEM ONLINE.

Printed books at **estore.cap.org**

Ebooks at **ebooks.cap.org**

15 Microbiology

Microbiology testing is changing at a rapid pace—so is our proficiency testing.

Introducing three new programs for:

- Molecular testing for *Mycoplasma genitalium* (MGEN)
- Molecular testing for herpes simplex virus and varicella zoster virus, 5 challenges (ID5)
- Molecular testing for lower respiratory pneumonia panel, 5 challenges (IDPN)

Microbiology

Microbiology 172
Bacteriology 173
Mycobacteriology 188
Mycology 189
Parasitology 192
Virology 195
Multidiscipline Microbiology 201
Infectious Disease Serology 205

New Programs NEW

Routine Microbiology Combination (RMC) 176
Mycoplasma genitalium, Molecular (MGEN) 185
HSV, VZV—Molecular (ID5) 198
Infectious Disease, Pneumonia Panel (IDPN) 203

Discontinued Programs

Bacteriology—Limited (D4)
GC, Throat, and Urine Cultures (D7)
Microbiology—Combination w/GC (MC1, MC2)
Throat & Urine Culture/Rapid Strep A Antigen Detection (MC5)

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 microbiology. 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, ID5 , IDN** Nucleic Acid Amplification (pages 197, 198, 201) ▪ **D1** Throat Culture (page 175) ▪ **MRS2M/MRS5M** MRSA Screen, Molecular (page 182) ▪ **BOR** *Bordetella pertussis/ parapertussis* (page 180) ▪ **CDF5** *C. difficile* Detection (page 181) ▪ **MGEN** *Mycoplasma genitalium* (page 185) ▪ **TVAG** *Trichomonas vaginalis* (page 186) ▪ **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) ▪ **IDPN** Infectious Disease Pneumonia Panel (page 203) ▪ **IDR** Infectious Disease Respiratory Panel (page 202) ▪ **GIP, GIP5** Gastrointestinal Panel (page 204) ▪ **GNBC, GPBC** Blood Culture Panels (page 179) ▪ **MVP** Molecular Vaginal Panel (page 185)

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	D2	RMC	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

BIOHAZARD

BIOHAZARD 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

Procedure	Program Code			Challenges per Shipment
	D1	D2	D3	
Antimicrobial susceptibility testing		▮		1
Bacterial identification	▮	▮	▮	5
Gram stain		▮	▮	1
Culture source:	Throat	Urine	Cervical	
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	

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
- Throat swabs compatible with molecular- and culture-based methods
- Three shipments per year

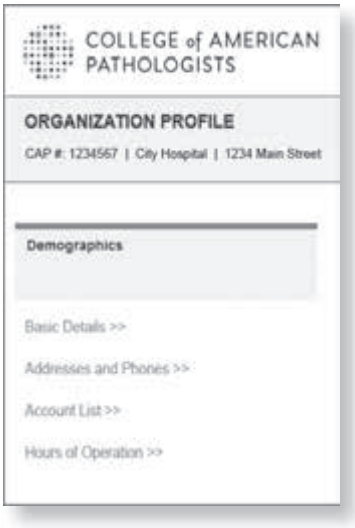
CE credit

BIOHAZARD

Ensure your laboratory's information is up-to-date.

The CAP's online Organizational Profile tool ensures your laboratory's information is current to alleviate any issues with your proficiency testing and accreditation procedures. No more mailing forms or experiencing delays in processing—information is recorded in real time.

Log into e-LAB Solutions Suite to review and update your laboratory's information.



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

Routine Microbiology Combination RMC

NEW

Procedure	Program Code	Challenges per Shipment
	RMC	
Antimicrobial susceptibility testing	▮	1
GC culture	▮	2
Gram stain	▮	2
Group A *Streptococcus* antigen detection*	▮	1
Throat culture	▮	3
Urine culture	▮	3

*If your laboratory uses a waived method for Group A *Streptococcus*, these results will not count toward the required five challenges for the subspecialty of bacteriology.

Program Information

- Five loop specimens with diluents in duplicate, three 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

CE credit BIOHAZARD

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 your laboratory uses a waived method for Group A *Streptococcus*, these results will not count toward the required five challenges for the subspecialty of bacteriology.

Program Information

- MC3 - Two urine specimens with diluents
- MC4 - Five 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

CE credit BIOHAZARD

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

CE credit

BIOHAZARD 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 your laboratory uses a waived method for Group A *Streptococcus*, these results will not count toward the required five challenges for the subspecialty of bacteriology.

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

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

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

Analyte	Program Code	Challenges per Shipment
	CRO	
KPC	▮	3
IMP	▮	3
NDM	▮	3
OXA-48	▮	3
VIM	▮	3

Program Information
- Three 130-µL specimens
- Compatible with 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	
***C. trachomatis* antigen detection (DFA)**	▮		5
***C. trachomatis* 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 *Staphylococcus aureus* Screen, 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

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

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

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 186.

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

Mycoplasma genitalium, Molecular MGEN

NEW

Analyte	Program Code	Challenges per Shipment
	MGEN	
Mycoplasma genitalium	▮	3

Program Information

- Three 1.0-mL liquid specimens
- Designed for molecular techniques
- Two shipments per year

Molecular Vaginal Panel MVP

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 1.0-mL liquid simulated vaginal specimens
- Designed for molecular methods such as BD MAX and Hologic
- Three shipments per year

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

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

Trichomonas vaginalis, Molecular TVAG

Analyte	Program Code	Challenges per Shipment
	TVAG	
Trichomonas vaginalis	▮	3

Program Information

- Three 1.0-mL liquid specimens
- Designed for molecular techniques
- Two shipments per year

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

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

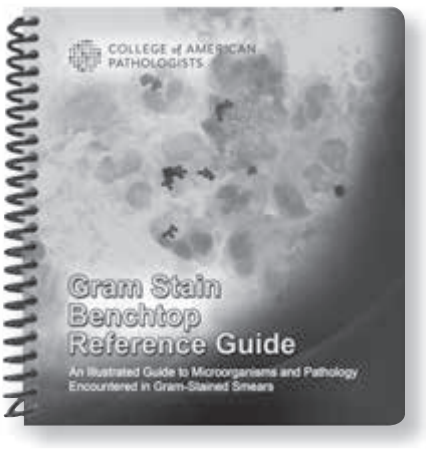
Identify microorganisms quickly and confidently.

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".



Item number: GSBRG
Spiral bound; 100 pages;
115+ images and tables; 2017

Add it to your order.

Or, view sample pages and purchase online:

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

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, Coccidioides,* 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 unstained 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 jirovecii 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

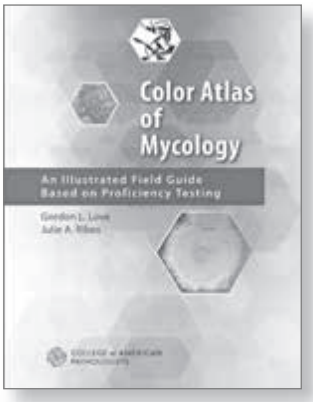
Color Atlas of Mycology (PUB226)

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).

Add Color Atlas of Mycology (PUB226) to your order.

Or, view sample pages and purchase online:

- printed books at estore.cap.org



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 *Cryptosporidium* immunoassays and/or 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 *Cryptosporidium* immunoassays and/or 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 *Cryptosporidium* immunoassays and/or 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 *Cryptosporidium* immunoassays and/or modified acid-fast stain
- P5 - Five 0.75-mL fecal suspensions for *Giardia* and *Cryptosporidium* immunoassays and/or modified acid-fast stain
- 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

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.

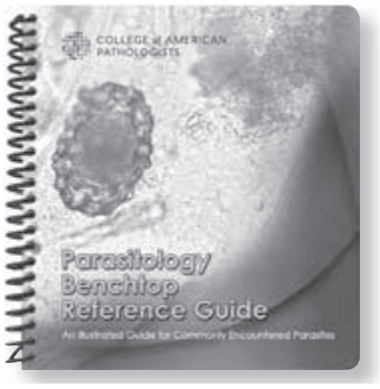
Program Information
- Three images, each available as photographs and online images
- Two shipments per year

Parasitology Benchtop Reference Guide (PBRG)

- More than 70 identifications for parasites commonly encountered in the clinical laboratory
- Five tabbed sections for easy reference
  - Blood Parasites
  - Intestinal Protozoa
  - Intestinal Helminths
  - Miscellaneous Specimens
  - Macroscopic Worms
- A durable and water-resistant format to withstand years of benchtop use—6½" x 7"

Add it to your order.

Or, view sample pages and purchase online:
- printed books at estore.cap.org
- ebooks at ebooks.cap.org



Item number: PBRG
Spiral bound; 98 pages;
70+ images and tables; 2014

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

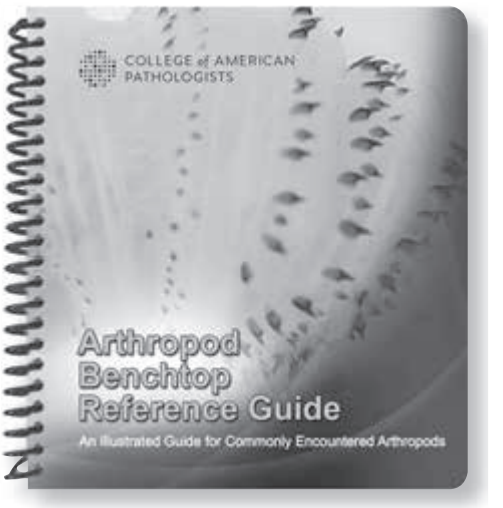
Program Information
- Three images, each available as photographs and online images
- Two shipments per year

Arthropod Benchtop Reference Guide (ABRG)

- Numerous identifications of ectoparasites commonly encountered in the clinical laboratory
- Detailed descriptions of the most significant morphologic elements, ecology, and clinical significance
- Eight tabbed sections for easy reference
  - Introduction
  - Ticks
  - Mites
  - Lice
  - Bed Bugs
  - Kissing Bugs
  - Fleas
  - Myiasis-causing Fly Larvae
- A durable and water-resistant format to withstand years of benchtop use—6½" x 7"

Add it to your order.

Or, view sample pages and purchase online:
- printed books at estore.cap.org
- ebooks at ebooks.cap.org



Item number: ABRG
Spiral bound; 82 pages;
65+ images and tables; 2016

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	▮	
ID5	▮	

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, participants 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 205)

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, ID5, 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*	
Herpes simplex virus antigen detection (DFA)	▮		5
Herpes simplex virus 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 287.

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

** Laboratories performing SARS-CoV-2 testing should see COV2 program in online store, here.

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

HSV, VZV—Molecular ID5

NEW

Analyte	Program Code	Challenges per Shipment
	ID5	
Herpes simplex virus	▮	5
Varicella-zoster virus	▮	5

Program Information

- Five 1.0-mL liquid specimens
- Designed for molecular techniques
- 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 1.5-mL plasma specimens; two shipments per year
- HBVL5 - Five 1.5-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

*HIV genotyping is for laboratories reporting reverse transcriptase, protease, and/or integrase mutations.

Program Information

- HV2 - Five 2.5-mL EDTA plasma specimens
- HIVG - One 1.0-mL liquid 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

Atlas of Fundamental Infectious Diseases Histopathology (PUB127)

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.

Add it to your order.

Or, view sample pages and purchase online:

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

Item number: PUB127
Softcover; 304 pages; 800+ images and tables; 2018

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.

View your expedited linearity evaluations within two business days by logging into e-LAB Solutions Suite.

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

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 instrument calibration by using peer group data for a broader view beyond your laboratory.
- **Customized report package**—Let our team of biostatisticians perform the statistical analysis of your results so you do not have to.
- **Expedited results**—View your linearity evaluation for most CVL programs within two business days of data submission.

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

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/Chlamydia pneumoniae**	▮	▮	1
Methicillin-resistant *Staphylococcus aureus*	▮	▮	1
Molecular typing (bacterial isolates)	▮	▮	1
Mycobacterium tuberculosis	▮		1
Mycoplasma pneumoniae	▮	▮	1
Vancomycin-resistant *Enterococcus*	▮	▮	1

**Legionella pneumophila/Chlamydia pneumoniae* will be included in the following shipments:

- Shipment A: *Chlamydia pneumoniae*
- Shipment B: *Legionella pneumophila*

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

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
Chlamydia 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

*Laboratories performing SARS-CoV-2 testing should see COV2 program in online store, here.

Infectious Disease, Pneumonia Panel IDPN

NEW

Analyte	Program Code	Challenges per Shipment
	IDPN	
Acinetobacter calcoaceticus-baumannii complex	▮	5
Adenovirus	▮	5
Coronavirus*	▮	5
Chlamydia pneumoniae	▮	5
Enterobacter cloacae complex	▮	5
Escherichia coli	▮	5
Haemophilus influenzae	▮	5
Human metapneumovirus	▮	5
Rhinovirus/Enterovirus	▮	5
Influenza A	▮	5
Influenza B	▮	5
Klebsiella aerogenes	▮	5
Klebsiella oxytoca	▮	5
Klebsiella pneumoniae group	▮	5
Legionella pneumophila	▮	5
Moraxella catarrhalis	▮	5
Mycoplasma pneumoniae	▮	5
Parainfluenza virus	▮	5
Proteus spp.	▮	5
Pseudomonas aeruginosa	▮	5
Respiratory syncytial virus (RSV)	▮	5
Serratia marcescens	▮	5
Staphylococcus aureus	▮	5
Streptococcus agalactiae	▮	5
Streptococcus pneumoniae	▮	5
Streptococcus pyogenes	▮	5

Includes antimicrobial resistance genes as appropriate.

*Laboratories performing SARS-CoV-2 testing should see COV2 program in online store, here.

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	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

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

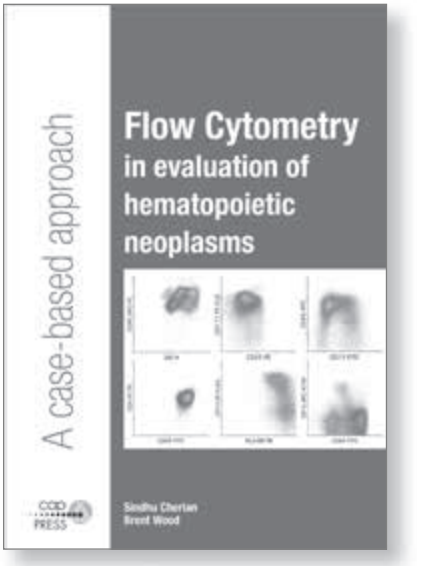
Analyte	Program Code	Challenges per Shipment
	TTD	
Antibodies to tick-transmitted disease organisms	▮	3

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

Rely on this reference for a rapidly growing field.

Flow Cytometry in Evaluation of Hematopoietic Neoplasms: A Case-Based Approach is a practical, case-based guide to flow cytometric analysis in the workup of hematopoietic neoplasms presenting in the peripheral blood, marrow, lymphoid tissue, and extranodal sites. This text provides pathologists, residents, laboratory technologists, and hematologists with both a study guide and an atlas for regular consultation in the clinical flow cytometry laboratory.



Item number: PUB221
Hardcover; 176 pages; 2012

Add it to your order.

Or, view sample pages and purchase online:

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

16 Immunology and Flow Cytometry

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.

Immunology and Flow Cytometry

Immunology 208
Flow Cytometry 215

New Programs NEW

Flow Cytometry—Post-Immunotherapy Analysis (FL6) 216

New Analyte Additions NEW

Antiphosphatidylserine Antibody (APS) 211
Cyclic Citrullinated Peptide Antibody (Anti-CCP) (CCP) 212

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 these Surveys 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

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

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-Ro52 antibody	▮			1	1	1
Anti-Ro62 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 210.

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
Antiphosphatidylserine/prothrombin antibody (aPS/PT) NEW	▮	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
Rheumatoid factor isotypes (IgA, IgM, IgG) NEW	▮	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 cytometry 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—Post-Immunotherapy Analysis FL6

NEW

Procedure	Program Code	Challenges per Shipment
	FL6	
Post-immunotherapy flow cytometry analysis	▮	3

Survey FL6 is appropriate for laboratories that perform flow cytometry analysis on samples from patients treated with chimeric antigen receptor (CAR) T-cell or other immunotherapy regimens that cause immunophenotypic changes to normal and/or neoplastic cells.

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 1.1-mL specimen containing a cell line/whole blood mixture simulating B lymphoblastic leukemia/lymphoma minimal residual disease with clinical history
- 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 Quality Cross Check—Transfusion Medicine program (JATQ).

Transfusion Medicine, Viral Markers, and Parentage Testing

Transfusion Medicine 220
Viral Markers 230
Parentage Testing 233

New Programs NEW

Antibody Titer—Automated (AABT, AABT1, AABT2, AABT3) 224

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 3.0-mL 3% red blood cell suspensions; five 3.0-mL corresponding serum specimens; one 3.0-mL donor red blood cell suspension
- J1 - Five 3.0-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	
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, and/or compatibility testing
- Must order in conjunction with Survey JAT
- Three shipments per year

CE credit

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 221. 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

Program Information

- Two 2.0-mL 2%–4% red blood cell suspensions
- Two shipments per year

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.

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

Antibody Titer—Automated AABT, AABT1, AABT2, AABT3

NEW

Procedure	Program Code				Challenges per Shipment
	AABT	AABT1	AABT2	AABT3	
Anti-A titer	▮	▮			1
Anti-B titer				▮	1
Anti-D titer	▮		▮		1

Program Information

- AABT - One 2.0-mL plasma specimen for anti-A titer; one 2.0-mL plasma specimen for anti-D titer
- AABT1 - One 2.0-mL plasma specimen for anti-A titer
- AABT2 - One 2.0-mL plasma specimen for anti-D titer
- AABT3 - One 2.0-mL plasma specimen for anti-B titer
- 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

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

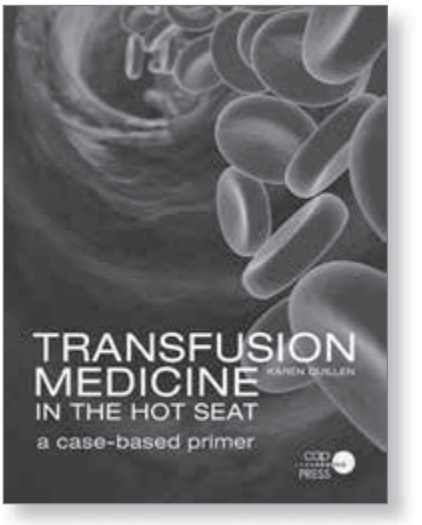
- Two 1.2-mL whole blood specimens
- Two online, whole slide images per year with optional grids for cell counting
- Powered by DigitalScope technology
- Two shipments per year; order shipments individually or for an entire year

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.



Add Transfusion Medicine in the Hot Seat (PUB224) to your order.

Or, view sample pages and purchase online:

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

Item number: PUB224
Softcover; 123 pages

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

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.

Program Information

- BDP - Two lyophilized pellet specimens with diluents; two shipments per year
- BDP5 - Five lyophilized pellet specimens with diluents; three shipments per year

Bacterial Detection in Platelets, Rapid BDPV, BDPV5

Procedure	Challenges per Shipment	
	Program Code	
	BDPV	BDPV5
CMS certified rapid immunoassay	2	5

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.

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

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

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.

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

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 231 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	
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
- 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

Help pathologists stay current with rapidly changing issues in clinical pathology.

The **Clinical Pathology Improvement Program (CPIP)** provides peer-reviewed, interactive, case-based learning activities that cover a diverse portfolio of real-life clinical scenarios. Every month, you receive a new online module with images and clinical details that unfold as you solve the case in real time. Earn CME/SAM credits upon successful completion of the posttest.

Add CPIP/CPIP1 to your Surveys order.

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

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 proficiency testing 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.

18 Histocompatibility

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

Antibody Titer—Automated (AABT, AABT1, AABT2, AABT3)..... 238

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 0.25-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 0.25-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 236 for specimen and analyte information.

Program Information

- MXB - Class I: three 0.25-mL plasma specimens, two purified peripheral blood lymphocyte specimens; Class II: three 0.25-mL plasma specimens, two purified peripheral blood lymphocyte specimens
- MXC - Class I: three 0.50-mL plasma specimens, two purified peripheral blood lymphocyte specimens; Class II: three 0.50-mL plasma specimens, two 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

Antibody Titer—Automated AABT, AABT1, AABT2, AABT3

NEW

Procedure	Program Code				Challenges per Shipment
	AABT	AABT1	AABT2	AABT3	
Anti-A titer	▮	▮			1
Anti-B titer				▮	1
Anti-D titer	▮		▮		1

Program Information

- AABT - One 2.0-mL plasma specimen for anti-A titer; one 2.0-mL plasma specimen for anti-D titer
- AABT1 - One 2.0-mL plasma specimen for anti-A titer
- AABT2 - One 2.0-mL plasma specimen for anti-D titer
- AABT3 - One 2.0-mL plasma specimen for anti-B titer
- 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

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.

Includes over 600+ photomicrographs and tables.

Add it to your order.

View sample pages and purchase online:

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

Item number: PUB124
254 pages; 2015

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

- o Carbamezepine induced Stevens-Johnson syndrome (CSJ)
- o Allopurinol Stevens-Johnson syndrome (ASJ)
- o Hypersensitivity to abacavir (HA)
- o Dapsone hypersensitivity (DH)

DADR2

- o Celiac disease (CD)
- o Narcolepsy (N)
- o Pemphigus vulgaris (PV)
- o Psoriasis (P)
- o Antiglomerular basement membrane disease (ABM)
- o Birdshot retinochoroidopathy (BR)
- o Idiopathic myopathy (IM)

19 Genetics and Molecular Pathology

The CAP broadens its network of laboratory experts through its collaborations.

Among the organizations with which we partner:

- American Association for Clinical Chemistry (AACC)
- American College of Medical Genetics and Genomics (ACMG)
- Association for Molecular Pathology (AMP)
- National Society for Histotechnology (NSH)

Genetics and Molecular Pathology

Cytogenetics 242
Biochemical and Molecular Genetics 245
Next-Generation Sequencing 254
Molecular Oncology—Solid Tumors 258
Molecular Oncology—Hematologic 262

Program Changes

Next-Generation Sequencing—Germline (NGS) New dry challenge 254

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

ACMG American College of Medical Genetics and Genomics Translating Genes Into Health®

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 2020-A:
  Constitutional disorder - Prenatal aneuploidy probes (interphase cells) (two slides)
  Constitutional disorder - (two paper/photograph challenges)
  Hematologic disorder - *MLL* gene rearrangement (two slides)
  Hematologic disorder - (two paper/photograph challenges)
- CYF 2020-B:
  Constitutional disorder - *SHOX* (two slides)
  Constitutional disorder - (two paper/photograph challenges)
  Hematologic disorder - *BCR/ABL1* gene rearrangement (two slides)
  Hematologic disorder - (two paper/photograph challenges)
- CYF is prepared from cell suspension samples. For FISH in paraffin-embedded tissues, see page 243.
- These programs are only for laboratories that perform both hybridization and interpretation under the same CLIA number.

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

ACMG American College of Medical Genetics and Genomics Translating Genes Into Health®

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						
SS18 gene rearrangement			▮		1	
EWSR1 gene rearrangement			▮			1
Lymphoma Tissue						
MALT1 gene rearrangement				▮	1	
MYC gene rearrangement				▮		1

Additional Information

- These programs are only for laboratories that perform both hybridization and interpretation under the same CLIA number.
- For HER2 FISH, interpretation only, for breast cancer, see page 282.

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

ACMG American College of Medical Genetics and Genomics

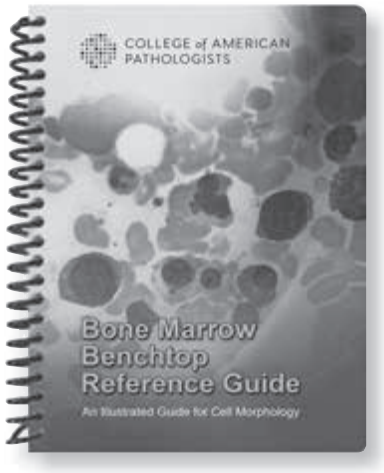
Bone Marrow Benchtop Reference Guide (BMBRG)

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.

Add it to your order.

Or, view sample pages and purchase online:

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



Item number: BMBRG
Spiral bound; 2018

CAP/ACMG Constitutional Microarray CYCGH

Procedure	Program Code	Challenges per Shipment
	CYCGH	
Cytogenomic microarray analysis for constitutional abnormality	▮	2
Educational dry challenge for constitutional abnormality	▮	1

Program Information

- Two 3.0-µg DNA specimens; one dry challenge
- Two shipments per year

ACMG American College of Medical Genetics and Genomics Translating Genes Into Health®

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 dry challenge for oncologic abnormality	▮	1

Program Information

- One 2.0-ug DNA specimen; one dry challenge
- Two shipments per year

ACMG American College of Medical Genetics and Genomics Translating Genes Into Health®

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

ACMG American College of Medical Genetics and Genomics Translating Genes Into Health®

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

ACMG American College of Medical Genetics and Genomics Translating Genes Into Health®

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

ACMG American College of Medical Genetics and Genomics Translating Genes Into Health®

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
- Results for this program must be submitted online through e-LAB Solutions Suite
- Two shipments per year

ACMG American College of Medical Genetics and Genomics

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)
- Results for this program must be submitted online through e-LAB Solutions Suite
- Two shipments per year

ACMG American College of Medical Genetics and Genomics

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

ACMG American College of Medical Genetics and Genomics Translating Genes Into Health®

CAP/ACMG Inherited Cancer Sequencing Panel ICSP

Analyte/Procedure	Program Code	Challenges per Shipment
	ICSP	
Inherited cancer 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 cancer.
- Participants will be asked to identify variants in the following genes: *BRCA1*, *BRCA2*, *CDKN2A*, *MLH1*, *MSH2*, *MSH6*, and *PMS2*.

Program Information

- Three 80.0-µL purified extracted DNA specimens (50 ng/µL)
- Results for this program must be submitted online through e-LAB Solutions Suite
- Two shipments per year

ACMG American College of Medical Genetics and Genomics Translating Genes Into Health®

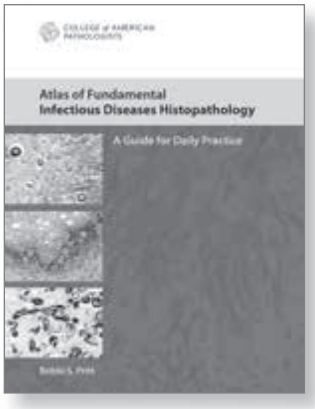
Atlas of Fundamental Infectious Diseases Histopathology (PUB127)

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.

Add it to your order.

Or, view sample pages and purchase online:

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



Item number: PUB127
Softcover; 304 pages; 800+ images and tables; 2018

CAP/ACMG Molecular Genetics Series MGL1, MGL2, MGL3, MGL4, MGL5

Disease/Gene	Program Code					Challenges per Shipment
	MGL1	MGL2	MGL3	MGL4	MGL5	
Bloom syndrome (*BLM* gene)				▮		3
BRCA1/2			▮			3
Canavan (*ASPA* gene)				▮		3
Connexin 26 (*GJB2* gene)			▮			3
Cystic fibrosis (*CFTR* gene)		▮			▮	3/2(MGL5)
DMD/Becker (*DMD* gene)		▮				3
Factor V Leiden (*F5* gene)	▮					3
Familial dysautonomia (*IKBKAP* gene)				▮		3
Fanconi anemia complementation group C (*FANCC* gene)				▮		3
Fragile X (*FMR1* gene)	▮					3
Friedreich ataxia (*FXN* gene)		▮				3
Gaucher (*GBA* gene)				▮		3
Glycogen storage disease type IA (*G6PC* gene)				▮		3
Hemochromatosis (*HFE* gene)	▮					3
Hemoglobin S/C		▮				3
Huntington (*HTT* gene)		▮				3
Methylene tetrahydrofolate reductase (*MTHFR* gene) c.665C>T (677C>T) and c.1286A>C (1298A>C)	▮					3
Mucolipidosis IV (*MCOLN1* gene)				▮		3
Multiple endocrine neoplasia type 2 (*RET* gene)			▮			3
Myotonic dystrophy (*DMPK* gene)		▮				3
Niemann-Pick type A/B (*SMPD1* gene)				▮		3
Plasminogen activator inhibitor (PAI)-1 (*SERPINE1* gene)	▮					3

Continued on the next page

Program Information

- MGL1, MGL2, MGL3, MGL4 - Three 50.0-µg extracted DNA specimens per disease/gene
- MGL5 - Two 50.0-µg extracted DNA specimens
- Two shipments per year

ACMG American College of Medical Genetics and Genomics Translating Genes Into Health®

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 Series MGL1, MGL2, MGL3, MGL4, MGL5 continued

Disease/Gene	Program Code					Challenges per Shipment
	MGL1	MGL2	MGL3	MGL4	MGL5	
Prader-Willi/Angelman syndrome	▮					3
Prothrombin (*F2* gene)	▮					3
RhD		▮				3
Spinal muscular atrophy (*SMN1* and *SMN2* genes)		▮				3
Spinocerebellar ataxia (*ATXN1*, *ATXN2*, *ATXN3*, *CACNA1A*, and *ATXN7* genes)		▮				3
Tay-Sachs (*HEXA* gene)				▮		3

Program Information

- MGL1, MGL2, MGL3, MGL4 - Three 50.0-µg extracted DNA specimens per disease/gene
- MGL5 - Two 50.0-µg extracted DNA specimens
- Two shipments per year

ACMG American College of Medical Genetics and Genomics Translating Genes Into Health®

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 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

ACMG American College of Medical Genetics and Genomics Translating Genes Into Health®

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.

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 30.0-µg extracted DNA specimens; forward and reverse lyophilized primers are provided. Two shipments per year
- Results for both programs must be submitted online through e-LAB Solutions Suite

ACMG
American College of Medical Genetics and Genomics
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	
Rett (*MECP2*) genotyping	▮	3
Rett (*MECP2*) duplication/deletion analysis	▮	3

Program Information

- Three 10.0-µg extracted DNA specimens
- Two shipments per year

ACMG
American College of Medical Genetics and Genomics
Translating Genes Into Health®

CAP/ACMG Thrombophilia Mutations TPM

Analyte/Procedure	Program Code	Challenges per Shipment
	TPM	
Factor II (*F2* gene, Prothrombin)	▮	3
Factor V Leiden (*F5* gene)	▮	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

ACMG American College of Medical Genetics and Genomics

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 activity 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

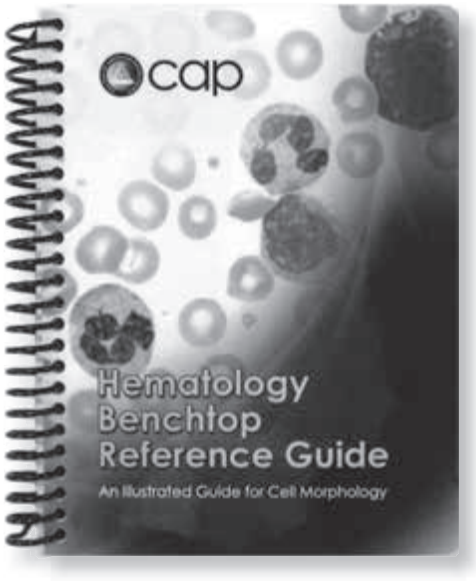
Hematology Benchtop Reference Guide (HBRG)

- 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”

Add it to your order.

Or, view sample pages and purchase online:

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



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	▮	2

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 gDNA specimen; one educational variant interpretation paper challenge
- 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 some of these 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 gDNA (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 some of these 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 gDNA (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 some of these 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 FASTQ file 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 254) 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. For the most up-to-date information on system requirements, go to cap.org and click **System Requirements**, located at the bottom of the home page.
- Due to the extremely large file sizes, a minimum allowable transfer speed of 40 Mbps or higher is needed to ensure successful transfer of your laboratory's sequencing files to the CAP. Contact your IT 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 and steps to provide your laboratory's exome file will be included in the kit materials.

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 254) 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. For the most up-to-date information on system requirements, go to cap.org and click **System Requirements**, located at the bottom of the home page.
- Due to the extremely large file sizes, a minimum allowable transfer speed of 40 Mbps or higher is needed to ensure successful transfer of your laboratory's sequencing files to the CAP. Contact your IT 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 and steps to provide your laboratory's sequencing file will be included in the kit materials.

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 278.

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 243.

Additional Information

Survey ISH2 is only for laboratories that perform both hybridization and interpretation under the same CLIA number.

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 243.

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 Tumor DNA CFDNA

Analyte/Procedure	Program Code	Challenges per Shipment
	CFDNA	
cfDNA	▮	3

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%.

Program Information

- Three 125-ng DNA (25 ng/mL) specimens
- Two shipments per year

Fusion RNA Sequencing RNA

Analyte/Procedure	Program Code	Challenges per Shipment
	RNA	
RNA	▮	3

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 259).
- Potential fusion variants include: *CD74-ROS1, EML4-ALK, ETV6-NTRK3, FGFR3-TACC3, PAX8-PPARG, SLC45A3-BRAF*.
- Specific intragenic fusion/exon skipping variants may also be included, specifically *EGFRvIII* and *MET* exon 14 skipping.

Program Information

- Three 500-ng RNA (20 ng/µL) specimens
- Two shipments per year

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 -

  One specimen containing four 10.0-micron unstained paraffin section slides and one H&E slide

  Two 1.0-µg gDNA (50 ng/µL) specimens
- 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 254), 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	▮	3
IDH1, IDH2	▮	3
10q *(PTEN)* deletion	▮	1

Program Information

- Four 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)

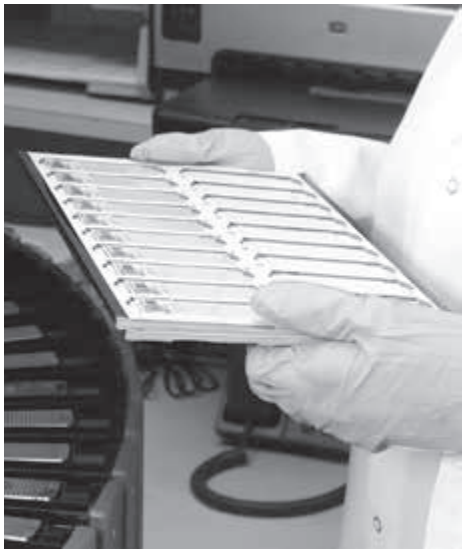
Minimal Residual Disease MRD, MRD1, MRD2

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



Depend on our commitment to slide quality for PAP PT and PAP Education programs.

- Every slide is reviewed and approved by pathologists and cytotechnologists before it is put in circulation.
- All slide sets are reviewed every six months by a staff cytotechnologist.
- Slides that do not maintain consensus grading are removed from the program and reviewed by a committee of pathologist experts.

Anatomic Pathology

Surgical Pathology 264
General Immunohistochemistry 278
Predictive Markers 281
Specialty Anatomic Pathology 283
Cytopathology 285

New Programs NEW

CAP/NSH HistoQIP Central Nervous System IHC (HQNEU) 272
CAP/NSH HistoQIP In Situ Hybridization (Kappa/Lambda) (HQISH) 272
CAP/NSH HistoQIP Melanoma IHC (HQMEL) 273
Dermatopathology Immunohistochemistry (DPIHC) 278
c-Myc/Bcl-2 Immunohistochemistry Tissue Microarray (MYBC) 279
CAP/ACMG *HER2* Gene Amplification by FISH, Interpretation Only (CYHI) 282

Program Changes

BRAF V600E (BRAFV) Additional Mailing 278
CD20 Immunohistochemistry Tissue Microarray (PM3) Additional Mailing 279
PD-L1 (PDL1) Additional Mailing 279
Highly Sensitive Anaplastic Lymphoma Kinase IHC (PM6) Additional Mailing 280

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

Medical Kidney Diseases: Morphology-Based Novel Approach to Renal Biopsy (PUB129)

This book is designed to provide brief and concise yet comprehensive information for practicing pathologists, pathology residents, and nephrology fellows. It presents a simple and practical approach to renal biopsy by providing a pertinent differential diagnosis related to various patterns of injuries involving renal parenchyma by light microscopy, reaching a correct diagnosis by assimilating immunofluorescence and electron microscopy findings. The book is divided into sections on glomerular, vascular, tubulointerstitial, and transplant renal pathology.

Add it to your order.

Or, view sample pages and purchase online:

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

Item number: PUB129
Softcover; 92 pages; 245+ photomicrographs, exhibits, and tables; 2019

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:
  - 2020-A Upper Gastrointestinal Tract Biopsy
  - 2020-B Bone Biopsy
  - 2020-C Lymph Node Biopsy
  - 2020-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

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 Pathology Improvement Programs (CPIP/CPIP1)

CPIP supports pathologists who principally practice clinical pathology as well as those who primarily practice anatomic pathology but cover clinical pathology. A diverse portfolio of real-life case scenarios, including images and clinical background, help pathologists to stay abreast of issues and advances in the lab.

Designed for pathologists, by pathologists. Each case is developed and peer-reviewed ensuring what you learn is practical and easily applied to your work. Thought provoking questions with feedback and a multiple-choice post-test allow you to assess and confirm your diagnostic skills. Participants who earn a passing score on the post-test may apply their earned credits to the ABP's CC requirements.

Clinical Pathology Improvement Program CPIP/CPIP1

Program Name	Program Code	Cases/Year
	CPIP/CPIP1	
Online cases in clinical pathology	▮	12 (One per month. See below.)

Additional Information

Consider the CPIP program if you are a:

- Medical director seeking to continuously improve the clinical pathology knowledge and collective skills of your pathology team.
- Pathologist with clinical and/or laboratory management responsibilities.
- Pathologist seeking CME/SAM or CC credits in clinical pathology.
- Subspecialty clinical pathologist who needs to keep current.

To learn more visit www.cap.org and search CPIP.

Discipline	Case Schedule (subject to change)	Month 2020
Lab Management	How to retire a test	January
Toxicology	Non-cancer pain management	February
Hematology	Molecular approach to myeloid neoplasms	March
Chemistry	Growth hormone testing	April
Transfusion Medicine	Blood bank education for clinical staff	May
Hematology	Neutrophilia	June
Microbiology	Automation in clinical microbiology	July
Transfusion Medicine	Utilization of platelets and plasma	August
Hematology	Flow/lymphocytosis	September
Molecular Pathology	Cell-free and/or circulating tumor cell DNA testing for solid tumors	October
Chemistry	Adrenal function testing	November
Lab Management	Physician wellness	December

Program Information

- CPIP - One online clinical laboratory case per month
- CPIP1 - Reporting option with CME/SAM credit for each additional pathologist (within the same institution); 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

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 gastrointestinal and miscellaneous topics.
- 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/cytotechnologist (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

CAP/NSH HistoQIP HQIP

Stain/Tissue	Program Code	Challenges per Shipment	
	HQIP	A	B
H&E – Bone marrow needle core biopsy	▮	1	
H&E – Lymph node, excision specimen	▮	1	
IHC – Podoplanin, appendix specimen	▮	1	
IHC – CD5, lymph node nonneoplastic specimen	▮	1	
Special stain – Reticulin, liver biopsy specimen	▮	1	
H&E – Colon resection	▮		1
H&E – Stomach resection	▮		1
IHC – SOX10, skin resection	▮		1
IHC – E-cadherin, ductal carcinoma (breast) resection	▮		1
Special stain – Elastin, lung resection	▮		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.

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, along with mycobacteria, *Helicobacter pylori*, spirochetes, and fungi.

Add Histologic Preparations: Common Problems and Their Solutions (PUB123) to your order. Or, view sample pages and purchase online:

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

Item number: PUB123
Softcover; 168 pages; 300+ photomicrographs, figures, and tables; 2009

HistoQIP IHC programs assess preanalytic steps. For immunohistochemistry programs that focus on analytic and postanalytic (interpretive) steps, see the immunohistochemistry programs on pages 272-276.

CAP/NSH HistoQIP Central Nervous System IHC HQNEU

NEW

Stain/Tissue	Program Code	Challenges per Shipment	
	HQNEU	A	B
H&E – Glioblastoma	▮	1	
IHC – GFAP positive glioblastoma	▮	1	
IHC – p53 positive glioblastoma	▮	1	
H&E – IDH1 positive mutant glioma	▮	1	
IHC – IDH1 (R132H) positive mutant glioma	▮	1	
H&E – Low grade astrocytoma	▮		1
IHC – S100 positive low grade astrocytoma	▮		1
IHC – Ki-67 positive low grade astrocytoma	▮		1
H&E – ATRX positive wild-type glioma	▮		1
IHC – ATRX positive wild-type glioma	▮		1

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 central nervous system gliomas.

Program Information

- Participants may submit up to three IHC and two H&E stained coverslipped glass slides (one from each category) per mailing
- Two shipments per year

CAP/NSH HistoQIP In Situ Hybridization (Kappa/Lambda) HQISH

NEW

Stain/Tissue	Program Code	Challenges per Shipment	
	HQISH	A	B
H&E – Nonneoplastic tonsil	▮	1	
DNA/RNA positive control probe (ISH)	▮	1	
DNA/RNA negative control probe (ISH)	▮	1	
Kappa ISH (Kappa probe, ISH)	▮	1	
Lambda ISH (Lambda probe, ISH)	▮	1	
H&E – Bone marrow core biopsy	▮		1
DNA/RNA positive control probe (ISH)	▮		1
DNA/RNA negative control probe (ISH)	▮		1
Kappa ISH (Kappa probe, ISH)	▮		1
Lambda ISH (Lambda probe, ISH)	▮		1

Additional Information

This program augments efforts to improve the preparation of ISH slides in all anatomic pathology laboratories involved in the handling of specimens undergoing analysis for kappa and lambda expression by chromogenic in situ hybridization.

Program Information

- Participants are to submit an H&E, positive and negative reagent control slides and kappa and lambda DNA/RNA ISH stained coverslipped glass slides (one from each category) per mailing
- Two shipments per year

HistoQIP IHC programs assess preanalytic steps. For immunohistochemistry programs that focus on analytic and postanalytic (interpretive) steps, see the immunohistochemistry programs on pages 272-276.

CAP/NSH HistoQIP Melanoma IHC HQMEL

NEW

Stain/Tissue	Program Code	Challenges per Shipment	
	HQMEL	A	B
H&E – Melanoma, skin biopsy	▮	1	
IHC – Melan A/MART-1 positive melanoma, skin biopsy	▮	1	
IHC – SOX10 positive melanoma, skin biopsy	▮	1	
H&E – PD-L1 positive melanoma, skin biopsy	▮	1	
IHC – PD-L1 positive melanoma, skin biopsy	▮	1	
H&E – Melanoma, skin resection	▮		1
IHC – S100 positive melanoma, skin resection	▮		1
IHC – HMB-45 positive melanoma, skin resection	▮		1
H&E – BRAF V600E positive mutated melanoma	▮		1
IHC – BRAF V600E positive mutated melanoma	▮		1

Program Information

- Participants may submit up to three IHC and two 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 skin specimens containing melanoma.

HistoQIP IHC programs assess preanalytic steps. For immunohistochemistry programs that focus on analytic and postanalytic (interpretive) steps, see the immunohistochemistry programs on pages 272-276.

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

CAP/NSH HistoQIP—IHC HQIHC

Stain/Tissue	Program Code	Challenges per Shipment	
	HQIHC	A	B
IHC – Desmin, leiomyoma	▮	1	
IHC – CD20, tonsil resection	▮	1	
IHC – ER, tonsil resection	▮	1	
IHC – BCL6, follicular lymphoma	▮	1	
IHC – GATA3, bladder biopsy	▮	1	
IHC – Calretinin, appendix	▮		1
IHC – Pancytokeratin, liver resection	▮		1
IHC – PR, breast core biopsy	▮		1
IHC – PAX5, tonsil resection	▮		1
IHC – NKX3.1, prostatic adenocarcinoma	▮		1

Program Information

- Participant laboratories may submit up to five 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.

HistoQIP IHC programs assess preanalytic steps. For immunohistochemistry programs that focus on analytic and postanalytic (interpretive) steps, see the immunohistochemistry programs on pages 272-276.

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

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.

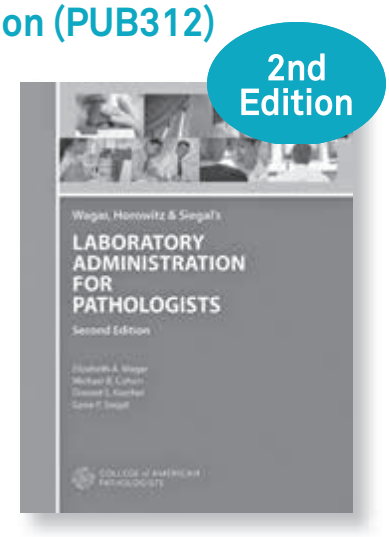
Program Information

- 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

Laboratory Administration for Pathologists, Second Edition (PUB312)

Laboratory Administration for Pathologists is designed to provide pathologists with an overview of the fundamentals of management and leadership, addressing the specific role and responsibility of the pathologist in directing the laboratory.

- Provides information for both clinical and anatomic pathology practice
- Includes an overview of patient safety not available in the first edition
- Covers financial management of the laboratory and the pathology practice
- Geared for trainees and those entering practice while appropriate for all pathologists



Add it to your order.

Or, view sample pages and purchase online:

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

Item number: PUB312
Hardcover; 296 pages; 2019

HistoQIP IHC programs assess preanalytic steps. For immunohistochemistry programs that focus on analytic and postanalytic (interpretive) steps, see the immunohistochemistry programs on pages 272-276.

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

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.

Program Information

- Participants may submit up to three IHC and two H&E stained coverslipped glass slides (one from each category) per mailing
- Two shipments per year

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

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.

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

HistoQIP IHC programs assess preanalytic steps. For immunohistochemistry programs that focus on analytic and postanalytic (interpretive) steps, see the immunohistochemistry programs on pages 272-276.

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.

HistoQIP IHC programs assess preanalytic steps. For immunohistochemistry programs that focus on analytic and postanalytic (interpretive) steps, see the immunohistochemistry programs on pages 272-276.

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
- Two shipments per year

Dermatopathology Immunohistochemistry DPIHC

NEW

Procedure	Program Code	Challenges per Shipment
	DPIHC	
Dermatopathology	▮	8

Program Information

- Six glass slides with unstained tissue sections from two separate cases; additional slides provided for an H&E stain, four to be stained and one for negative control
- Two shipments per year

DNA Mismatch Repair MMR

Procedure	Program Code	Challenges per Shipment
	MMR	
DNA mismatch repair by immunohistochemistry	▮	4

If your laboratory performs DNA mismatch repair by molecular methods, see the MSI program on page 258.

Program Information

- Four 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

These general immunohistochemistry Surveys assess analytic and postanalytic (interpretive) steps. For Surveys focusing on preanalytic steps, see the HistoQIP IHC programs on pages 272-276.

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
- Two shipments per year

CD117, CD20 Immunohistochemistry Tissue Microarray PM1, PM3

Analyte	Program Code		Challenges per Shipment
	PM1	PM3	
CD117	▮		10
CD20		▮	10

Program Information
- PM1, PM3 — One 10-core tissue microarray slide per predictive marker
- PM1: One shipment per year; PM3: Two shipments per year

For ER/PgR testing, see the PM2 program on page 281.

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

c-Myc/Bcl-2 Immunohistochemistry Tissue Microarray MYBC

Analyte	Program Code	Challenges per Shipment
	MYBC	
c-Myc	▮	10
Bcl-2	▮	10

Program Information
- Two 10-core tissue microarray slides, one for c-Myc and one for Bcl-2
- Two shipments per year

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

These general immunohistochemistry Surveys assess analytic and postanalytic (interpretive) steps.
For Surveys focusing on preanalytic steps, see the HistoQIP IHC programs on pages 272-276.

Immunohistochemistry Tissue Microarray Series PM5

Analyte	Program Code	Challenges per Shipment
	PM5	
pan-TRK	▮	10
Ki-67	▮	10

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. The IHC markers for this Survey may change from those listed above due to development constraints.

Program Information

- Two 10-core tissue microarray slides, one for pan-TRK and one for Ki-67
- One shipment per year

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
- Two shipments 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.

These general immunohistochemistry Surveys assess analytic and postanalytic (interpretive) steps. For Surveys focusing on preanalytic steps, see the HistoQIP IHC programs on pages 272-276.

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.

These general immunohistochemistry Surveys assess analytic and postanalytic (interpretive) steps. For Surveys focusing on preanalytic steps, see the HistoQIP IHC programs on pages 272-276.

CAP/ACMG *HER2* Gene Amplification by FISH, Interpretation Only CYHI

NEW

Analyte/Procedure	Program Code	Challenges per Shipment
	CYHI	
HER2 gene amplification in breast cancer, interpretation only	▮	3

Additional Information

- *HER2* Gene Amplification by FISH, Interpretation Only, is an exercise and is not considered proficiency testing. This exercise may be used to meet the requirements for alternative assessment.
- This program is for laboratories that perform interpretation only for HER2 FISH for breast cancer.
- For laboratories that perform both hybridization and interpretation for HER2 FISH for breast cancer under the same CLIA number, see page 243.

Program Information

- Three online, educational interpretation dry challenges; your CAP shipping contact will be notified via email when the activity is available
- Two shipments per year

ACMG
American College of Medical Genetics and Genomics
Translating Genes into Health®

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 or CE credit is available for one pathologist or pathologists' assistant; for each additional pathologist/pathologists' assistant order AUP1
- Includes the option to download program content
- AUP1 - Reporting option with CME/SAM or CE credit for each additional pathologist or pathologists' assistant (within the same institution); must order in conjuction with Survey AUP
- 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 pathologists' assistant for completion of entire year
- This activity meets the ABP CC Part IV Practice Performance Assessment requirements
- Two online activities per year

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 at least 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)

CME CE credit

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
        - o A mailing ships February
        - o B mailing ships August
      - Series 2
        - o A mailing ships May
        - o 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 gastrointestinal and miscellaneous topics.
- 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/ cytotechnologist (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 own CAP Profile?

Each laboratory staff member should have their own profile. Your profile is transferable 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 FNA of unusual variants of common tumors and EBUS/EUS 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 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

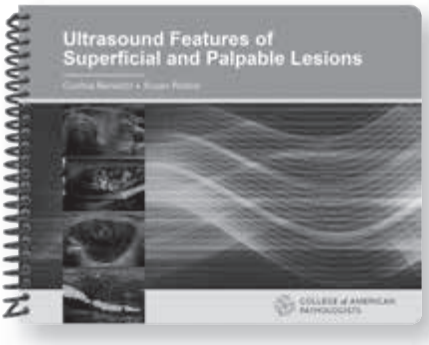
Ultrasound Features of Superficial and Palpable Lesions (PUB128)

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.

Add Ultrasound Features of Superficial and Palpable Lesions (PUB128) to your order.

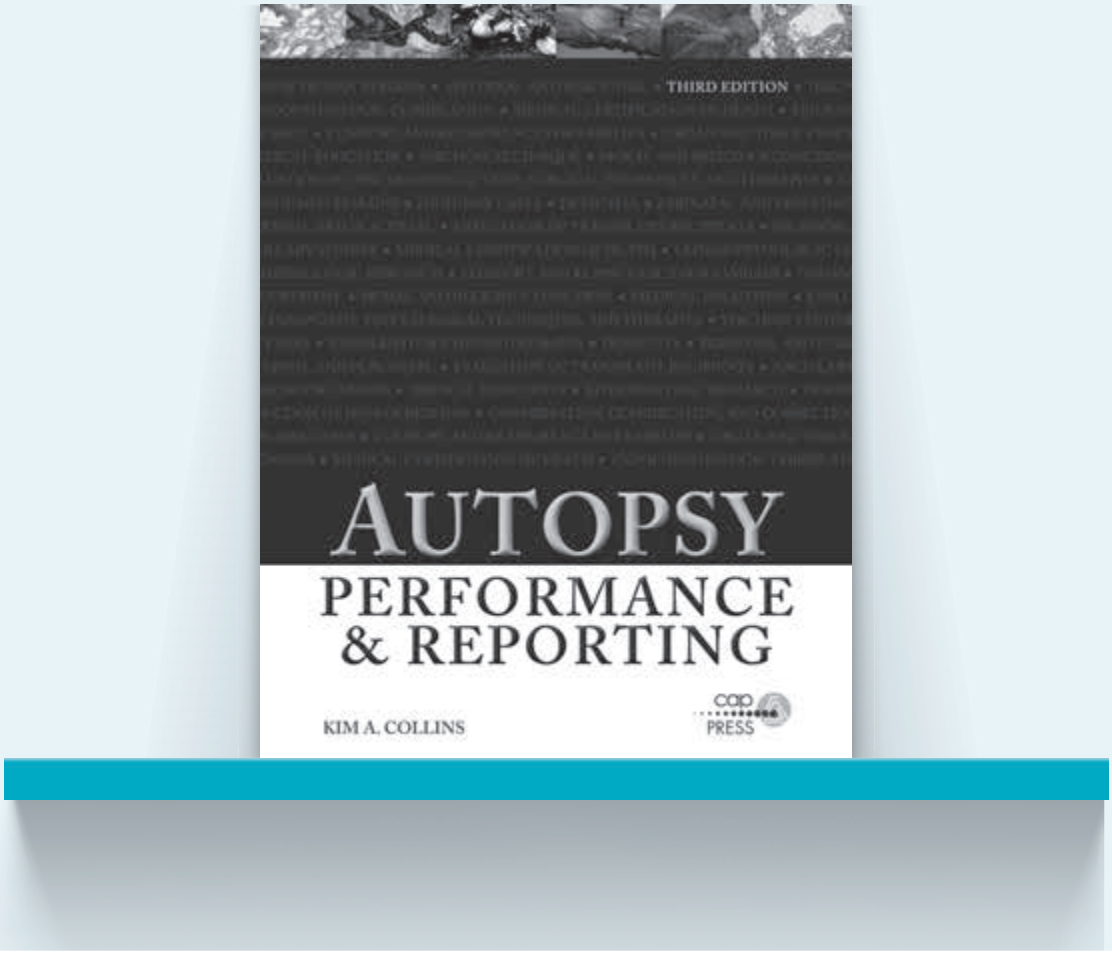
Or, view sample pages and purchase online:

- 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

VIEW SAMPLE PAGES AND ORDER ONLINE.

Printed books at **estore.cap.org**

Ebooks at **ebooks.cap.org**

21 Forensic Sciences

We live our mission of quality.

- More than 8,000 CAP-accredited laboratories
- Approximately 4,000 CAP inspections annually
- More than 22,500 laboratory sites using CAP proficiency testing

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

Clinical Toxicology Testing: A Guide for Laboratory Professionals, Second Edition (PUB227)

This book is a practical guide, written for pathologists, to directing hospital toxicology laboratory operations. This new edition features expanded sections on testing in the clinical setting, methodologies, and more user-friendly information on specific analytes. It provides the reader with a comprehensive view of what is needed—and expected—when offering a clinical toxicology service.

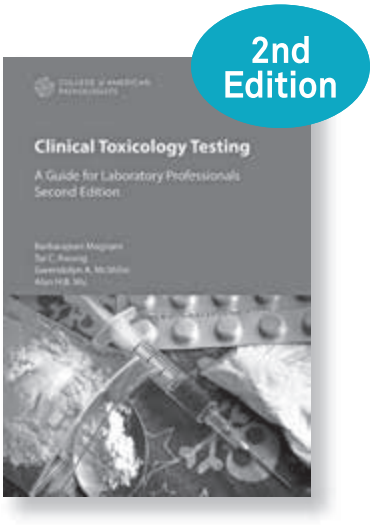
Contents include:

- Toxicology testing in the clinical setting, including new chapters on pediatric testing and chronic opioid therapy
- Toxicokinetics and methodologies, with new and expanded information on laboratory-developed tests, screening assays, targeted tests, and oral fluids and alternative matrices
- Specific analytes, including novel psychoactive substances and the use of medical cannabis
- Appendices on such useful topics as urine and serum screens, therapeutic drug monitoring, and proficiency testing

Add it to your order.

Or, view sample pages and purchase online:

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



Item number: PUB227
Softcover; 2019

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

CE credit

FTC Program Drug Listing

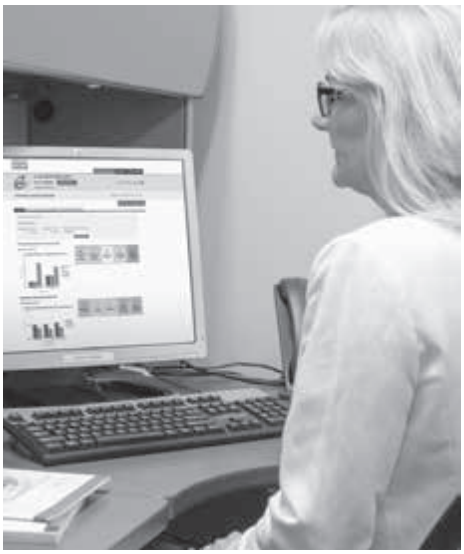
Challenges will include a mix of drugs from the list below.

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
1,25 dihydroxy Vitamin D		BMV1	Bone Markers and Vitamins	86
1,5-anhydroglucitol		AG	1,5-Anhydroglucitol	71
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	261
11-deoxycortisol		Y/YY	Ligand Assay, Special	84
11-hydroxy-THC		THCB	Blood Cannabinoids	106
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, total	X	ABVD	Accuracy-Based Vitamin D	112
		LN40	Vitamin D Cal Ver/Lin	130
25-OH vitamin D, total (cont.)	X	VITD	25-OH Vitamin D	84
50:50 mixing study, APTT		CGE/CGEX	Coagulation, Extended	161
		CGS1	Coag Special, Series 1	162
50:50 mixing study, PT		CGE/CGEX	Coagulation, Extended	161
		CGS1	Coag Special, Series 1	162
ABO grouping	X	**J, J1**	Transfusion Medicine	220
	X	**JAT**	Transfusion Medicine, Automated	221
		JATE1	Transfusion Medicine, Automated, Educational	221
		JATQ	Quality Cross Check, Transfusion Medicine	49
		TMCA	Transfusion Medicine, Competency Assessment	225
ABO subgroup typing		ABOSG	ABO Subgroup Typing	222
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 phosphatase	X	C3, C3X, CZ, CZ2X, CZX	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
Acid-fast smear	X	**E**	Mycobacteriology	188
	X	**E1**	Mycobacteriology, Ltd	188

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Acinetobacter calcoaceticus-baumannii complex		IDPN	Infectious Disease, Pneumonia Panel	203
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
		CGS3	Coag Special, Series 3	162
		CGS4	Coag Special, Series 4	162
		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
Active vitamin B12		MMA	MMA and Active Vitamin B12	82
Acylcarnitine		BGL	Biochemical Genetics	245
ADAMTS13		CGS7	ADAMTS13	162
Adenovirus		GIP	Gastrointestinal Panel	204
	X	**GIP5**	Gastrointestinal Panel	204
		ID2	Nucleic Acid Amp, Respiratory	198
		IDPN	Infectious Disease, Pneumonia Panel	203
	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 ver/lin		I	Instrumentation	132
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	133
		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	133
		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	133
		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	213
Alpha-1 antitrypsin	X	**IG/IGX**	Immunology, General	208
		LN7	Immunology Cal Ver/Lin	123
Alpha-1 antitrypsin genotyping	X	AAT	Alpha-1 Antitrypsin Genotyping	245
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	210
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	247
Alprazolam		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
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
		CZQ	Quality Cross Check, Chemistry and TDM	41

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Amikacin (cont.)		LN3	TDM Cal Ver/Lin	121
Amino acids, qualitative	X	BGL	Biochemical Genetics	245
Amino acids, quantitative		BGL	Biochemical Genetics	245
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	134
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	133
		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
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	132
Anaplasma phagocytophilum		TTD	Antibody Detection-Tick-Transmitted Diseases	205
Anaplastic lymphoma kinase		PM6	Anaplastic Lymphoma Kinase IHC	280
Androstenedione	X	Y/YY	Ligand Assay, Special	84
Angiotensin converting enzyme		ACE	Angiotensin Converting Enzyme	71
Anti ADAMTS13 IgG		CGS7	ADAMTS13	162
Anti-A titer		AABT, AABT1	Antibody Titer, Automated	224
		ABT, ABT1	Antibody Titer	223
Anti-B titer		AABT3	Antibody Titer, Automated	224
		ABT3	Antibody Titer	223
Antibody detection	X	**J, JAT**	Transfusion Medicine	220–221
		JATE1	Transfusion Medicine, Automated, Educational	221
		JATQ	Quality Cross Check, Transfusion Medicine	49
	X	PS	Platelet Serology	225
		TMCA	Transfusion Medicine, Competency Assessment	225
Antibody detection/ identification (HLA)	X	MX1B, MX1C, MX1E, MXB, MXC	HLA Analysis, Class I	236–237
	X	MX2B, MX2C, MX2E, MXB, MXC	HLA Analysis, Class II	236–237
Antibody identification		ETME1	Expanded Transfusion Medicine Exercises	229
	X	**J, JAT**	Transfusion Medicine	220–221
		JATE1	Transfusion Medicine, Automated, Educational	221
		TMCA	Transfusion Medicine, Competency Assessment	225

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Antibody screen (HLA)		MX1B, MX1C, MX1E, MXB, MXC	HLA Analysis, Class I	236–237
		MX2B, MX2C, MX2E, MXB, MXC	HLA Analysis, Class II	236–237
Antibody titer		ABT, ABT1, ABT2, ABT3	Antibody Titer	223
Antibody titer, automated		AABT, AABT1, AABT2, AABT3	Antibody Titer, Automated	224
Anticardiolipin IgA, qualitative		ACL, APS	Antiphospholipid Antibody	211
Anticardiolipin IgA, quantitative		ACL, APS	Antiphospholipid Antibody	211
Anticardiolipin IgG, IgM, polyclonal; qualitative	X	ACL, APS	Antiphospholipid Antibody	211
Anticardiolipin IgG, IgM, polyclonal; quantitative		ACL, APS	Antiphospholipid Antibody	211
Anti-CCP		CCP	Cyclic Citrullinated Peptide Antibody	212
Anticentromere antibody		S2	Immunology, Special	209
Antichromatin antibody		ACA	Antichromatin Antibody	210
Anti-CMV, IgG, IgM	X	VR3	Infectious Disease Serology	205
Anti-CMV, total	X	VM3	Viral Markers-Series 3	230
	X	VR3	Infectious Disease Serology	205
Anti-D titer		AABT, AABT2	Antibody Titer, Automated	224
		ABT, ABT2	Antibody Titer	223
Anti-DNA (ds) antibody, qualitative	X	S2, S4	Immunology, Special	209
Anti-DNA (ds) antibody, quantitative		S2, S4	Immunology, Special	209
Anti-DNA topoisomerase (Anti-Scl-70)		RDS	Rheumatic Disease Special Serologies	213
Antideamidated gliadin peptide antibody screen, IgA, IgG		CES, CESX	Celiac Serology	212
Antideamidated gliadin peptide antibody, IgA, IgG; qualitative	X	CES, CESX	Celiac Serology	212
Antideamidated gliadin peptide antibody, IgA, IgG; quantitative		CES, CESX	Celiac Serology	212
Antideamidated gliadin peptide/tissue transglutaminase antibody screen, IgA, IgG		CES, CESX	Celiac Serology	212
Antiendomysial antibody IgA, qualitative		CES, CESX	Celiac Serology	212
Antiendomysial antibody IgA, quantitative		CES, CESX	Celiac Serology	212

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Antiendomysial antibody IgG, qualitative		CES, CESX	Celiac Serology	212
Antiendomysial antibody IgG, quantitative		CES, CESX	Celiac Serology	212
Antifilamentous actin IgG antibody		FCN	Antifilamentous Actin Antibody	210
Antifungal drugs monitoring		AFD	Antifungal Drugs Monitoring	106
Antifungal susceptibility testing	X	F	Mycology and Aerobic Actinomycetes	189
	X	F1	Yeast	189
Antigen detection, bacterial		CDF2	*Clostridium difficile* Detection	180
	X	**CDF5**	*Clostridium difficile* Detection	181
	X	**D**	Bacteriology	173
	X	**D6**	Rapid Group A Strep	177
	X	**D8**	Group B Strep	178
	X	D9	Rapid Group A Strep, Waived	177
	X	**HC1**	*C. trachomatis* by DFA	181
	X	**HC3**	*C. trachomatis* by EIA	181
		LBAS	*Legionella pneumophila*	178
	X	**MC4**	Urine Colony Count Combination	176
		POC4	POC Strep Screen Competency	52
	X	**RMC**	Routine Microbiology Combination	176
		SBAS	*Streptococcus pneumoniae*	178
	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	212
Antigliadin antibody IgA, IgG, quantitative		CES, CESX	Celiac Serology	212
Antiglomerular basement membrane, qualitative	X	S2	Immunology, Special	209
Antiglomerular basement membrane, quantitative		S2	Immunology, Special	209
Anti-HAV, IgG	X	VM1	Viral Markers-Series 1	230
Anti-HAV, IgM	X	VM5	Viral Markers-Series 5	231
Anti-HAV, total		VM1	Viral Markers-Series 1	230
Anti-HBc, IgM	X	**VM5**	Viral Markers-Series 5	231
Anti-HBc, total	X	**VM1**	Viral Markers-Series 1	230
Anti-Hbe	X	VM2	Viral Markers-Series 2	230
Anti-HBs, qualitative	X	VM1	Viral Markers-Series 1	230
Anti-HBs, quantitative		VM1	Viral Markers-Series 1	230
Anti-HCV	X	RHCVW	Anti-HCV, Rapid Methods, Waived	231
	X	VM1	Viral Markers-Series 1	230
Antihistidyl t-RNA synthetase (Jo-1)		RDS	Rheumatic Disease Special Serologies	213
Antihistone antibody		AHT	Antihistone Antibody	210
Anti-HIV-1	X	**AHIV**	Anti-HIV Rapid Methods	231
	X	AHIVW	Anti-HIV Rapid Methods	231
	X	**VM1**	Viral Markers-Series 1	230
Anti-HIV-2	X	**AHIV**	Anti-HIV Rapid Methods	231
	X	VM1	Viral Markers-Series 1	230
Anti-HIV-1/2	X	**AHIV**	Anti-HIV Rapid Methods	231
	X	AHIVW	Anti-HIV Rapid Methods	231
	X	**VM1**	Viral Markers-Series 1	230
Anti-HIV-1/2, HIV-1 p24 antigen	X	**VM6, VM6X**	Viral Markers-Series 6	231
Anti-HTLV-I/II		VM3	Viral Markers-Series 3	230
Anti-Jo-1 (antihistidyl t-RNA synthetase)		RDS	Rheumatic Disease Special Serologies	213
Anti-LKM		LKM	Liver-Kidney Microsomal Antibody	213
Antimicrobial susceptibility testing	X	**D**	Bacteriology	173
	X	**D2**	Urine Cultures	175
		MBT	Microbiology Bench Tools Competency	174
	X	**RMC**	Routine Microbiology Combination	176
Antimitochondrial antibody, qualitative	X	S2	Immunology, Special	209
Antimitochondrial antibody, quantitative		S2	Immunology, Special	209
Antimitochondrial M2 antibody		H	Antimitochondrial M2 Antibody	210
Anti-MPO		S2	Immunology, Special	209
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	209
Antinuclear antibody (ANA)	X	**ANA, IL**	Immunology	208
Antiparietal cell antibody		APC	Autoimmune Gastritis Markers	210
Antiphosphatidylserine antibodies (IgG, IgM, and IgA)		APS	Antiphosphatidylserine Antibodies	211

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Antiphosphatidylserine/prothrombin complex		APS	Antiphosphatidylserine Antibodies	211
Antiphospholipid antibody		ACL	Antiphospholipid Antibody	211
Anti-PR3		S2	Immunology, Special	209
Antiribosomal P antibody		ARP	Antiribosomal P Antibody	211
Anti-RNP antibody, qualitative	X	S2	Immunology, Special	209
Anti-RNP antibody, quantitative		S2	Immunology, Special	209
Anti-*Saccharomyces cerevisiae* antibody		ASC	Anti-*Saccharomyces cerevisiae* Antibody	211
Anti-Scl-70 (anti-DNA topoisomerase)		RDS	Rheumatic Disease Special Serologies	213
Anti-Sm antibody, qualitative	X	S2	Immunology, Special	209
Anti-Sm antibody, quantitative		S2	Immunology, Special	209
Anti-Sm/RNP antibody, qualitative	X	S2	Immunology, Special	209
Anti-Sm/RNP antibody, quantitative		S2	Immunology, Special	209
Antismooth muscle antibody, qualitative	X	S2	Immunology, Special	209
Antismooth muscle antibody, quantitative		S2	Immunology, Special	209
Antisperm antibody IgG		ASA	Semen Analysis	156
Anti-SSA antibody, qualitative	X	S2	Immunology, Special	209
Anti-SSA antibody, quantitative		S2	Immunology, Special	209
Anti-SSA/SSB antibody, qualitative	X	S2	Immunology, Special	209
Anti-SSA/SSB antibody, quantitative		S2	Immunology, Special	209
Anti-SSB antibody, qualitative	X	S2	Immunology, Special	209
Anti-SSB antibody, quantitative		S2	Immunology, Special	209
Antistreptolysin O (ASO)	X	**ASO, IL**	Immunology	208
Antithrombin (activity, Ag)		CGE/CGEX	Coagulation, Extended	161
		CGS2	Coag Special, Series 2	162
		LN35	Thrombophilia Cal Ver/Lin	129
Antithyroglobulin antibody, qualitative	X	S2, S4	Immunology, Special	209
Antithyroglobulin antibody, quantitative		S2, S4	Immunology, Special	209
Antithyroid microsomal, qualitative	X	S2, S4	Immunology, Special	209
Antithyroid microsomal, quantitative		S2, S4	Immunology, Special	209
Antithyroid peroxidase, qualitative	X	S2, S4	Immunology, Special	209
Antithyroid peroxidase, quantitative		S2, S4	Immunology, Special	209
Antitissue transglutaminase antibody IgA, qualitative	X	CES, CESX	Celiac Serology	212
Antitissue transglutaminase antibody IgA, quantitative		CES, CESX	Celiac Serology	212
Antitissue transglutaminase antibody IgG, qualitative		CES, CESX	Celiac Serology	212
Antitissue transglutaminase antibody IgG, quantitative		CES, CESX	Celiac Serology	212
Anti-*Trypanosoma cruzi*		VM4	Viral Markers-Series 4	230
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	245
Arsenic, urine		TMU	Trace Metals, Urine	103
Arsenic, whole blood		TMWB	Trace Metals, Whole Blood	103
Arthropod identification		TMO	Ticks, Mites, and Other Arthropods	194
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	133
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Aspirin assay		PIA, PIAX	Drug-Specific Platelet Aggregation	167
Astrovirus		GIP	Gastrointestinal Panel	204
	X	**GIP5**	Gastrointestinal Panel	204

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
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	283
B-ALL		BALL	B-ALL Minimal Residual Disease	216
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	128
	X	PCARI, PCARM, PCARMX	Plasma Cardiac Markers	65
		POC12	Competency Plasma Cardiac Markers	53
Babesia microti		TTD	Antibody Detection of Tick-Transmitted Diseases	205
Bacterial antigen detection		CDF2	*Clostridium difficile* Detection	180
	X	**CDF5**	*Clostridium difficile* Detection	181
	X	**D**	Bacteriology	173
	X	**D6**	Rapid Group A Strep	177
	X	**HC1**	*C. trachomatis* by DFA	181
	X	**HC3**	*C. trachomatis* by EIA	181
		LBAS	*Legionella pneumophila* Antigen Detection	178
	X	**MC4**	Urine Colony Count Combination	176
		POC4	POC Strep Screen Competency	52
	X	**RMC**	Routine Microbiology Combination	176
		SBAS	*S. pneumoniae* Antigen Detection	178
	X	**VS**	Vaginitis Screen	185

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Bacterial detection in platelets		BDP, BDPV	Bacterial Detection, Platelets	228
	X	**BDP5, BDPV5**	Bacterial Detection, Platelets	228
Bacterial identification	X	**D**	Bacteriology	173
	X	**D1, D2, D3, RMC**	Throat, Urine, GC Cultures	175–176
	X	**D8**	Group B Strep	178
		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
		MBT	Microbiology Bench Tools Competency	174
	X	**MC4**	Urine Colony Count Combination	176
		MRS	Methicillin-resistant *Staphylococcus aureus* Screen	182
		MRS2M	MRSA Screen, Molecular, 2 Challenge	182
	X	**MRS5**	Methicillin-resistant *Staphylococcus aureus* Screen	182
	X	**MRS5M**	MRSA Screen, Molecular, 5 Challenge	182
Bacterial strain typing		BSTS	Bacterial Strain Typing-*Staphylococcus*	178
Bacterial vaginosis screen		BV	Bacterial Vaginosis	184
		MVP	Molecular Vaginal Panel	185
		VS2	Vaginitis Screen, Virtual Gram Stain	186
Barbiturate group		DMPM	Drug Monitoring for Pain Management	107
		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	262
		MRD1	Minimal Residual Disease	262
BCR/ABL1 p210		MHO2, MHO3	Molecular Hematologic Oncology	262
		MRD	Minimal Residual Disease	262
Bence Jones protein		UBJP	Urinary Bence Jones Protein	76
Benzodiazepine group		DMPM	Drug Monitoring for Pain Management	107

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Benzodiazepine group (cont.)		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	134
Beta-2-glycoprotein I		ACL, APS	Antiphospholipid Antibody	211
Beta-2-microglobulin, serum	X	TM/TMX	Tumor Markers	89
Beta-2-microglobulin, urine		CD	Cadmium	102
Beta globulin		SPE	Serum Electrophoresis	76
Beta-hydroxybutyrate	X	KET	Ketones	64
Beta-thalassemia		HGM	Hemoglobinopathies, Molecular Methods	247
Bile crystal identification, photographs		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
		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	133

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Bilirubin, total (cont.)		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	245
Bioterrorism agents		LPX	Laboratory Preparedness Exercise	183
BK virus		ID1T	Nucleic Acid Amp, JC and BK	197
		VLS, VLS2	Viral Load	199
Blood cannabinoids		THCB	Blood Cannabinoids	106
Blood cell identification		VPBS	Virtual Peripheral Blood Smear	143
Blood cell identification photographs	X	**BCP, BCP2**	Blood Cell Identification	139
	X	**FH1-FH4, FH6, FH9, FH10, FH13, FH1P-FH4P, FH6P, FH9P, FH10P, FH13P**	Hematology Automated Differential	136
	X	**HEP**	Basic Hematology	136
Blood culture	X	BCS	Blood Culture	178
		GNBC	Gram-Negative Blood Culture Panel	179
		GPBC	Gram-Positive Blood Culture Panel	179
Blood culture *Staphylococcus aureus*	X	BCS1	Blood Culture *Staphylococcus aureus*	179
Blood or hemoglobin, urine	X	CMP, CMP1	Clinical Microscopy	146
Blood parasite	X	**BP**	Blood Parasite	193
	X	**P**	Parasitology	192
Blood parasite, rapid		RMAL	Rapid Malaria	193
Bloom syndrome (*BLM* gene)	X	MGL4	Molecular Genetics	248–249
Bocavirus		IDR	Infectious Disease Respiratory Panel	202
Body fluid (cell count)		ABF1, ABF2, ABF3	Automated Body Fluid	148
Body fluid (cell count) manual	X	HFC, HFCI	Hemocytometer Fluid Count	150–151

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Body fluid cell identification		CMP/CMP1	Clinical Microscopy	146
		VBF	Virtual Body Fluid	148
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	139
Bone marrow cell identification		BMD	Bone Marrow Cell Differential	139
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	180
		IDN, IDO	Nucleic Acid Amp, Organisms	201
	X	**IDR**	Infectious Disease Respiratory Panel	202
Bordetella pertussis		BOR	*Bordetella pertussis/ parapertussis*, Molecular	180
		IDN, IDO	Nucleic Acid Amp, Organisms	201
	X	**IDR**	Infectious Disease Respiratory Panel	202
Borrelia burgdorferi		TTD	Antibody Detection of Tick-Transmitted Diseases	205
BRAF	X	BRAF	Mutation Testing	260
	X	MTP	Multigene Tumor Panel	261
BRAF V600E		BRAFV	BRAF V600E	278
BRCA1/2	X	MGL3	Molecular Genetics	248–249
BRCA1/2 duplication/ deletion analysis	X	BRCA	*BRCA1/2* Sequencing	246
BRCA1/2 sequencing	X	BRCA	*BRCA1/2* Sequencing	246
Brain tissue by FISH		CYJ	Fluorescence In Situ Hybrid and Interpretation on Site, Brain/Glioma Tissue	243
Brightfield in situ hybridization	X	ISH2	In Situ Hybridization	258
Bromazepam		DFC	Drug-Facilitated Crime	108
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

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Buprenorphine (cont.)		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	180
		SP, SPN	Stool Pathogens-Rapid and Molecular	184
	X	**CDF5**	*Clostridium difficile* Detection	181
	X	**D**	Bacteriology, Antigen Detection	173
C. difficile toxin		CDF2	*Clostridum difficile* Detection	180
		CDF5	*Clostridum difficile* Detection	181
		D	Bacteriology-Antigen Detection	173
		GIP	Gastrointestinal Panel	204
		GIP5	Gastrointestinal Panel	204
		SP, SPN	Stool Pathogens, Rapid and Molecular	184
CA 15-3		LN34	Tumor Markers Cal Ver/ Lin	129
	X	TM/TMX	Tumor Markers	89
CA 19-9		FLD	Body Fluid	72
		FLDQ	Quality Cross Check, Body Fluid Chemistry	42
		LN34	Tumor Markers Cal Ver/ Lin	129
	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	129
	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

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Caffeine (cont.)		CZQ	Quality Cross Check, Chemistry and TDM	41
Calcitonin	X	TM/TMX	Tumor Markers	89
Calcium		ABVD	Accuracy-Based Vitamin D	112
	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	133
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
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
Calcium, urine		ABU	Accuracy-Based Urine	113
		LN6	Urine Chemistry Cal Ver/Lin	122
	X	U	Urine Chemistry, General	68
Calcofluor white		FSM	Fungal Smear	191
Campylobacter		CAMP	Campylobacter	180
		GIP	Gastrointestinal Panel	204
	X	**GIP5**	Gastrointestinal Panel	204
Canavan disease (*ASPA* gene)	X	MGL4	Molecular Genetics	248–249
***Candida* culture**	X	**F3**	*Candida* Culture	190
Candida glabrata vaginal, molecular		MVP	Molecular Vaginal Panel	185
Candida krusei vaginal, molecular		MVP	Molecular Vaginal Panel	185
***Candida* sp.**, DNA probe	X	**VS**	Vaginitis Screen	185
Candida sp. group, vaginal, molecular		MVP	Molecular Vaginal Panel	185
Cannabinoids			See Delta-9-THC-COOH and Delta-9-THC	
Carbamazepine	X	**CZ, CZ2X, CZX, Z**	Chemistry and TDM	56–58
Carbamazepine (cont.)		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	180
Carboxyhemoglobin	X	SO	Blood Oximetry	94
		SOQ	Quality Cross Check, Blood Oximetry	44
Cardiomyopathy sequencing panel		CMSP	Cardiomyopathy Sequencing Panel	246
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	245
Casts, urine, semiquantitative		UAA, UAA1	Automated Urinalysis	149
CD1a		RFAV1	Rare Flow Antigen Validation CD1a	218
CD3	X	FL, FL1	Lymphocyte Subset Immunophenotyping	215
		LN22	Flow Cytometry Cal Ver/Lin	126
		SCP	Stem Cell Processing	227
CD4	X	FL, FL1	Lymphocyte Subset Immunophenotyping	215
		LN22	Flow Cytometry Cal Ver/Lin	126
CD8	X	FL, FL1	Lymphocyte Subset Immunophenotyping	215
		LN22	Flow Cytometry Cal Ver/Lin	126
CD20		PM3	Immunohistochemistry	279
CD30		CD30	CD30 Immunohistochemistry	279
CD34		CBT	Cord Blood Testing	227
	X	FL4	Flow Cytometry CD34+	215
		SCP	Stem Cell Processing	227
CD45		CBT	Cord Blood Testing	227
	X	FL, FL1	Lymphocyte Subset Immunophenotyping	215

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
CD45 (cont.)		FL4	Flow Cytometry CD34+	215
		SCP	Stem Cell Processing	227
CD49d		ZAP70	ZAP-70 Analysis by Flow Cytometry	218
CD103		RFAV2	Rare Flow Antigen Validation, CD103	218
CD117 (c-kit)		PM1	Immunohistochemistry	279
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
		LN5S	Ligand Assay, Siemens Cal Ver/Lin	121
Cell free DNA		CFDNA	Cell-Free Tumor DNA	260
		NIPT	Noninvasive Prenatal Testing	88
Ceruloplasmin	X	S2, S4	Immunology, Special	209
CFU-GM		SCP	Stem Cell Processing	227
CH50		CH50	Total Hemolytic Complement	214
CH100		CH50	CH100	214
Chlamydia trachomatis	X	**HC1**	*C. trachomatis* by DFA	181
	X	**HC3**	*C. trachomatis* by EIA	181
	X	**HC6, HC6X**	*C. trachomatis*/GC by Nucleic Acid Amp	186
	X	**HC7**	*C. trachomatis*/GC DNA by NAA	186
		VR1	Virology Culture	196
Chlamydia pneumoniae		IDN, IDO	Nucleic Acid Amp, Organisms	201
		IDPN	Infectious Disease, Pneumonia Panel	203
	X	**IDR**	Infectious Disease, Respiratory Panel	202
Chlordiazepoxide		T	Toxicology	96
		UT	Urine Toxicology	96
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	133
		LN13C	Blood Gas Cal Ver/Lin	124-125
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Chloride (cont.)		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
		POC10, POC11	POC Competency Blood Gases	53
Chloride, sweat	X	SW1, SW2, 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	64
		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, urine		TMU	Trace Metals, Urine	103
Chromium, whole blood		TMWB	Trace Metals, Whole Blood	103
Chromosomal abnormalities	X	CY, CYBK	Cytogenetics	242
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
		CRTQ	Quality Cross Check, Cardiac Markers	42
		IFS	Interfering Substances	133
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
CK-MB (immunochemical) (cont.)		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	133
		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
Clobazam		DFC	Drug-Facilitated Crime	108
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
***Clostridium difficile* antigen**		CDF2	*C. diff,* 2 Challenge	180
	X	**CDF5**	*C. diff,* 5 Challenge	181
	X	**D**	Bacteriology-Antigen Detection	173
		SP, SPN	Stool Pathogens-Rapid and Molecular	184
Clostridium difficile toxin		CDF2	*Clostridum difficile* Detection	180
		CDF5	*Clostridum difficile* Detection	181
		D	Bacteriology-Antigen Detection	173
		GIP	Gastrointestinal Panel	204
		GIP5	Gastrointestinal Panel	204
		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	130
		VLS, VLS2	Viral Load	199
CMV (cont.)	X	VM3	Viral Markers-Series 3	230
	X	**VR1**	Virology Culture	196
	X	**VR2**	Viral Antigen Detection by DFA	196
	X	VR3	Infectious Disease Serology	205
c-Myc/Bcl-2 immunohistochemistry tumor markers		MYBC	c-Myc/Bcl-2 Immunohistochemistry Tumor Markers	279
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
		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	220–221
		JATE1	Transfusion Medicine, Automated, Educational	221
		TMCA	Transfusion Medicine, Competency Assessment	225
Complement C3	X	**IG/IGX**	Immunology, General	208
		LN7	Immunology Cal Ver/Lin	123
Complement C4	X	**IG/IGX**	Immunology, General	208
		LN7	Immunology Cal Ver/Lin	123
Complexed PSA	X	K/KK	Ligand Assay, General	82
Conductivity, sweat	X	SW1, SW2, SW4	Sweat Analysis Series	79
Connexin 26 (*GJB2* gene)	X	MGL3	Molecular Genetics	248–249
Copper	X	R	Trace Metals	78

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
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
		IDPN	Infectious Disease, Pneumonia Panel	203
	X	**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
	X	ING	Insulin, Gastrin, C-Peptide, PTH	86
		LN46	C-Peptide/Insulin Cal Ver/Lin	131
C-reactive protein (CRP)	X	CRP, IL	Immunology	208
		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	133
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
Creatine kinase (CK) (cont.)		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	133
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN24	Creatinine Accuracy Cal Ver/Lin	127
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
		SCO	Serum Carryover	134
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
		LN20	Urine Albumin Cal Ver/ Lin	126
		LN6	Urine Chemistry Cal Ver/Lin	122
	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	221–222
	X	**J, JAT**	Transfusion Medicine	220–221
	X	MX1B, MX1C, MXB, MXC	HLA Analysis, Class I	236–237
	X	MX2B, MX2C, MXB, MXC	HLA Analysis Class II	236–237

*Laboratories performing SARS-CoV-2 testing should see COV2 program in online store, here.

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Crossmatching (cont.)		TMCA	Transfusion Medicine, Competency Assessment	225
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	204
		GIP5	Gastrointestinal Panel	204
***Cryptosporidium* immunoassay, preserved specimen**	X	**P, P3, P4, P5**	Parasitology	192
Crystal identification (bile)		BCR	Bile crystals	149
Crystal identification (body fluid)		BFC	Body Fluid Crystals	149
Crystal identification (urine)		URC	Urine Crystals	149
Crystals, urine (semiquantitative)		UAA	Automated Urinalysis	149
CSF antigen detection	X	**D**	Bacteriology	173
CSF IgG calculations		OLI	CSF Chemistry and Oligoclonal Bands	74
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	212
Cyclobenzaprine		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Cyclospora cayatanensis		GIP	Gastrointestinal Panel	204
		GIP5	Gastrointestinal Panel	204
Cyclosporine	X	CS	Immunosuppressive Drugs	59
		LN31	Immunosuppressive Drugs Cal Ver/Lin	128
CYP2C9		PGX	Pharmacogenetics	251
CYP2C19		PGX	Pharmacogenetics	251
CYP2D6		PGX	Pharmacogenetics	251
CYP3A4		PGX	Pharmacogenetics	251
CYP3A5		PGX	Pharmacogenetics	251
Cystatin C		CYS	Cystatin C	74
Cystic fibrosis (*CFTR* gene)	X	MGL2, MGL5	Molecular Genetics	248–249
Cystine		KSA	Kidney Stone Risk Assessment	69
Cytogenomic microarray		CYCGH	Constitutional Microarray Analysis	244
		CYCMA	Cytogenomic Microarray Analysis for Oncologic Abnormality	244
Cytology proficiency testing			See Cytopathology GYN proficiency testing	
Cytomegalovirus (CMV)		ID1	Nucleic Acid Amp, Viruses	197
		IDME	Meningitis/Encephalitis Panel	202
		LN38	CMV Viral Load Cal Ver/Lin	130
		VLS, VLS2	Viral Load	199
	X	VM3	Viral Markers-Series 3	230
	X	**VR1**	Virology Culture	196
	X	**VR2**	Virology by DFA	196
	X	VR3	Infectious Disease Serology	205
Cytopathology GYN education		PAPCE1	PAP Edu, Conventional	286
		PAPJE1	PAP Edu, All Technologies	286
		PAPKE1	PAP Edu, SurePath	286
		PAPME1	PAP Edu, ThinPrep	286
Cytopathology GYN proficiency testing		**PAPCPT**	PAP PT, Conventional	285
		PAPJPT	PAP PT, Combination	285
		PAPKPT	PAP PT, SurePath	285
		PAPLPT	PAP PT, Combination	285
		PAPMPT	PAP PT, ThinPrep	285
Cytopathology, nongynecologic		FNA/FNA1	Fine-Needle Aspiration-Online	290
		FNAG/FNAG1	Fine-Needle Aspiration-Glass	291
		NGC/NGC1	Nongynecologic Cytopath Edu Prgm	289
Cytopreparation differential manual		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	131
	X	PCARM, PCARMX	Plasma Cardiac Markers	65
		POC12	Competency Plasma Cardiac Markers	53

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Delta-9-THC		FTC	Forensic Toxicology, Criminalistics	104
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		THCB	Blood Cannabinoids	106
		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	106
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UDS, UDS6	Urine Drug Screen	98
		UT	Urine Toxicology	96
		UTCO	Urine Toxicology Carryover	134
Demoxepam		T	Toxicology	96
Deoxypyridinoline (DPD)		BU	Bone and Mineral, Urine	85
Dermatopathology		DPATH/ DPATH1	Online Digital Slide Program	267
Dermatopathology immunohistochemistry		DPIHC	Dermatophathology Immunohistochemistry	278
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
		UT	Urine Toxicology	96
Desmethylcycloben-zaprine		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

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
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**	Hematology Automated Differential	136
		FH1P-FH4P, FH6P, FH9P, FH10P, FH13P		136
		FH3Q, FH4Q, FH6Q, FH9Q	Quality Cross Check, Automated Hematology Series	45
Differential (bone marrow), manual		BMD	Bone Marrow Cell Differential	139
Differential (fluid), manual		HFC, HFCI	Hemocytometer Fluid Count	150–151
Differential (peripheral blood), manual		EHE1	Expanded Virtual Peripheral Blood Smear	144
		VPBS	Virtual Peripheral Blood Smear	143
Digital slide program in fine-needle aspiration, online		FNA/FNA1	Online Digital Slide Program	290
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
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
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	224

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Direct antiglobulin testing (cont.)		TMCAD	Transfusion Medicine, Competency Assessment	225
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	240
Disopyramide	X	CZ, CZ2X, CZX, Z	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
DMD/Becker (*DMD* gene)	X	MGL2	Molecular Genetics	248–249
DNA analysis	X	DML	HLA Molecular Typing	237
		MHO	Molecular Oncology	262
	X	PARF	Parentage/Relationship	233
DNA content/cell cycle analysis		FL, FL2	Flow Cytometry	215
DNA extraction and amplification		MHO5	Molecular Oncology Hematologic	259, 262
DNA fingerprinting		IDN, IDO	Nucelic Acid Amp, Organisms	201
DNA mismatch repair		HQMMR	HistoQIP Mismatch Repair IHC	275
		MMR	DNA Mismatch Repair	278
DNA sequencing		SEC, SEC1	DNA Sequencing	250
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	251
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	204
	X	**GIP5**	Gastrointestinal Panel	204
eGFR		LN24	Creatinine Accuracy CalVer/Lin	127
EGFR—epidermal growth factor receptor	X	EGFR	Mutation Testing	260
	X	MTP	Multigene Tumor Panel	261
Electronic crossmatch		EXM, EXM2	Electronic Crossmatch	221–222
Electrophoresis	X	HG	Hemoglobinopathy	140
		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	224
		TMCAE	Eluate Competency Assessment	226
Embryology		EMB	Embryology	157
Enteroaggregative *E. coli* **(EAEC)**		GIP	Gastrointestinal Panel	204
	X	**GIP5**	Gastrointestinal Panel	204
Enterobacter cloacae complex		IDPN	Infectious Disease, Pneumonia Panel	203
Enteropathogenic *E. coli* **(EPEC)**		GIP	Gastrointestinal Panel	204
	X	**GIP5**	Gastrointestinal Panel	204
Enterotoxigenic *E. coli* **(ETEC)**		GIP	Gastrointestinal Panel	204
	X	**GIP5**	Gastrointestinal Panel	204
Enterovirus		ID1	Nucleic Acid Amp, Viruses	197
		IDME	Meningitis/Encephalitis Panel	202
	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	260
	X	MTP	Multigene Tumor Panel	261
Epinephrine	X	N/NX	Urine Chemistry, Special	69

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Epithelial cells, urine, semiquantitative		UAA1	Automated Urinalysis	149
Epstein-Barr virus (EBV)		ID1	Nucleic Acid Amp, Viruses	197
	X	ISH	In Situ Hybridization	258
		VLS, VLS2	Viral Load	199
		VR3	Antibody Detection-Infectious Disease Serology	205
ER, PgR by immunohistochemistry	X	PM2	ER, PgR by Immunohistochemistry	281
Erythrocyte sedimentation rate		ESR, ESR1, ESR2, ESR3	Erythrocyte Sedimentation Rate	140
Erythropoietin		EPO	Erythropoietin	88
Eschericia coli		IDPN	Infectious Disease, Pneumonia Panel	203
Escherichia coli K1		IDME	Meningitis/Encephalitis Panel	202
***Escherichia coli* O157**		GIP	Gastrointestinal Panel	204
	X	**GIP5**	Gastrointestinal Panel	204
Estazolam		DFC	Drug-Facilitated Crime	108
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	281
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
		CZQ	Quality Cross Check, Chemistry and TDM	41
Ethyl glucuronide (EtG)		ETB	Ethanol Biomarkers	102
Ethyl sulfate (EtS)		ETB	Ethanol Biomarkers	102
Ethylene glycol		AL1	Whole Blood Alcohol/Volatiles	101
		AL2	Serum Alcohol/Volatiles	101
Everolimus		EV	Everolimus	60
Factor II		CGE/CGEX	Coagulation, Extended	161
Factor II mutation	X	MGL1	Molecular Genetics	248–249
	X	TPM	Thrombophilia Mutations	252
Factor V		CGE/CGEX	Coagulation, Extended	161
Factor V Leiden mutation (*F5* gene)	X	MGL1	Molecular Genetics	248–249
	X	TPM	Thrombophilia Mutations	252
Factor VII		CGE/CGEX	Coagulation, Extended	161
Factor VIII		CGE/CGEX	Coagulation, Extended	161
		CGS3	Coag Special, Series 3	162
Factor VIII inhibitor		CGS3	Coag Special, Series 3	162
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 (*IKBKAP* gene)	X	MGL4	Molecular Genetics	248–249
Fanconi anemia, complementation grp. C (*FANCC* gene)	X	MGL4	Molecular Genetics	248–249
Fecal calprotectin		FCAL	Fecal Calprotectin	75
Fecal fat, qualitative		FCFS	Fecal Fat	75
Fecal lactoferrin		FLAC	Fecal Lactoferrin	181
Fecal occult blood		OCB	Occult Blood	151
		OCBQ	Quality Cross Check Occult Blood	46
Fentanyl		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
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
		LN5	Ligand Assay Cal Ver/Lin	121-122
		LN5S	Ligand Assay, Siemens Cal Ver/Lin	121-122
Fetal fibronectin	X	FF	Fetal Fibronectin	88

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Fetal hemoglobin (gastric fluid)		APT	Fetal Hemoglobin	150
Fetal hemoglobin identification	X	HG	Hemoglobinopathy	140
Fetal membrane rupture		ROM1	Placental Alpha Microglobulin 1 (PAMG-1)	152
Fetal red cell quantitation	X	HBF	Fetal Red Cell Detection	225
		TMCAF	Transfusion Medicine, Competency Assessment	226
Fetal screen (Rosette testing)	X	HBF	Fetal Red Cell Detection	225
		TMCAF	Transfusion Medicine, Competency Assessment	226
Fibrin degradation products, plasma		CGDF	Coagulation, D-dimer/ FDP	160
		CGL	Coagulation, Limited	160
		CGLQ	Quality Cross Check, Coagulation, Limited	47
Fibrin degradation products, serum		CGDF	Coagulation, D-dimer/ FDP	160
		CGL	Coagulation, Limited	160
		CGLQ	Quality Cross Check, Coagulation, Limited	47
Fibrin monomer		CGS3	Coag Special, Series 3	162
Fibrinogen	X	**CGL**	Coagulation, Limited	160
		CGLQ	Quality Cross Check, Coagulation, Limited	47
		LN44	Fibrinogen, Cal Ver/Lin	131
Fibrinogen antigen		CGE/CGEX	Coagulation, Extended	161
Fine-needle aspiration, digital slide program		FNA/FNA1	Online Digital Slide Program	290
Fine-needle aspiration, glass slides		FNAG/FNAG1	Fine-Needle Aspiration	291
FISH for brain/glioma		CYJ	Fluorescence In Situ Hybridization and Interpretation on Site, Brain/Glioma Tissue	243
FISH for breast carcinoma hybridization and interpretation on site (*HER2* gene amplification)	X	CYH	Fluorescence In Situ Hybridization and Interpretation on Site, Breast Cancer	243
FISH for breast carcinoma, interpretation only (*HER2* gene amplification)		CYHI	Interpetation Only, *HER2* FISH, Breast Cancer	282
FISH for constitutional and hematologic disorders		CYF	Fluorescence In Situ Hybridization and Interpretation on Site	242
FISH for lymphoma		CYL	Fluorescence In Situ Hybridization and Interpretation on Site, Lymphoma	243
FISH for paraffin-embedded tissue	X	CYH	Fluorescence In Situ Hybridization and Interpretation on Site, Breast Cancer	243
		CYJ	Fluorescence In Situ Hybridization and Interpretation on Site, Brain/Glioma Tissue	243
		CYK	Fluorescence In Situ Hybridization and Interpretation on Site, Solid Tumor	243
		CYL	Fluorescence In Situ Hybridization and Interpretation on Site, Lymphoma	243
FISH for solid tumor		CYK	Fluorescence In Situ Hybridization and Interpretation on Site, Solid Tumor	243
FISH for urothelial carcinoma hybridization and interpretation	X	CYI	Fluorescence In Situ Hybridization and Interpretation on Site, Urothelial Carcinoma	242
Flow cytometry, post-immunotherapy analysis		FL6	Flow Cytometry, Post-Immunotherapy Analysis	216
Fluconazole		AFD	Antifungal Drugs Monitoring	106
Flunitrazepam		T	Toxicology	96
		UT	Urine Toxicology	96
Fluorescent microscope check		I	Instrumentation	132
Fluoxetine		DFC	Drug-Facilitated Crime	108
		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
		LN5S	Ligand Assay, Siemens Cal Ver/Lin	121
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	294

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Forensic toxicology		FTC	Forensic Toxicology, Criminalistics	104
Fragile X (*FMR1* gene)	X	MGL1	Molecular Genetics	248–249
Free beta hCG		FP1B	First Trimester Maternal Screening, Free Beta	87
Free Kappa/Lambda ratio		SFLC	Serum Free Light Chains	214
Free testosterone	X	DY	Ligand Assay, Special	84
Friedreich ataxia (*FXN* gene)	X	MGL2	Molecular Genetics	248–249
Fructosamine		FT	Fructosamine	75
Fungal culture		CBT	Cord Blood Testing	227
		SCP	Stem Cell Processing	227
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		DFC	Drug-Facilitated Crime	108
		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	133
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Gamma hydroxybutyrate (GHB)		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 (*GBA* gene)	X	MGL4	Molecular Genetics	248–249
Genomic copy number array		CYCGH	Constitutional Microarray Analysis	244
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	204
		GIP5	Gastrointestinal Panel	204
***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 and Interpretation on Site, Brain/Glioma Tissue	243
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	133
		LN13, LN13C	Blood Gas Cal Ver/Lin	124-125
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
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

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Glucose, whole blood (cont.)	X	LCW	Ltd Chem, Waived	64
		LN17	Whole Blood Glucose Cal Ver/Lin	125
		POC2	POC Glucose Competency	52
		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 IA (*G6PC* gene)	X	MGL4	Molecular Genetics	248–249
Glycohemoglobin	X	GH2, GH5, GH5I	Hemoglobin A_{1c}	63
		GHQ	Quality Cross Check, Hemoglobin A_{1c}	42
		LN15	Hemoglobin A_{1c} Cal Ver/Lin	125
Glycosaminoglycans (mucopolysaccharides)	X	BGL	Biochemical Genetics	245
Gram stain	X	**D**	Bacteriology	173
	X	**D2, D3, RMC**	Throat, Urine, GC Cultures	175–176
	X	**D5**	Gram Stain	176
		VGS1	Virtual Gram Stain Basic	177
		VGS2	Virtual Gram Stain Advanced	177
		VS2	Vaginitis Screen, Virtual Gram stain	186
Group A *Streptococcus* antigen detection	X	**D**	Bacteriology	173
	X	**D6**	Rapid Group A Strep	177
	X	D9	Rapid Group A Strep, Waived	177
	X	MC4	Urine Colony Count Combination	176
		POC4	POC Strep Screen Competency	52
	X	**RMC**	Routine Microbiology Combination	176
Group B *Streptococcus*	X	**D8**	Group B Strep	178
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
		IDPN	Infectious Disease, Pneumonia Panel	203
Haptoglobin	X	IG/IGX	Immunology, General	208
	X	S2/S4	Immunology, Special	209
HBeAg	X	**VM2**	Viral Markers, Series 2	230
HBsAg	X	**VM1**	Viral Markers, Series 1	230
HBV	X	HBVL, HBVL5	Hepatitis Viral Load	198
	X	NAT	Nucleic Acid Testing	232
HCV	X	HCV2	Hepatitis Viral Load, Genotyping and Qualitative	198
		LN45	HCV Viral Load Cal Ver/ Lin	130
	X	NAT	Nucleic Acid Testing	232
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	64
		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	181
	X	S2, S4	*H. pylori* IgG Antibody	209
	X	S5	*H. pylori* IgG Antibody	209
	X	VR3	*H. pylori* IgG Antibody	205
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	227
	X	**FH15**	Centrifugal Hematology	137
	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
	X	HCC2	Waived Combination	66
	X	**HE, HEP**	Basic Hematology	136

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Hematocrit (cont.)		POC10, POC11	POC Competency Blood Gases	53
		SCP	Stem Cell Processing	227
	X	**SO**	Blood Oximetry	94
		SOQ	Quality Cross Check, Blood Oximetry	44
Hematologic disorders by FISH		CYF	Fluorescence In Situ Hybridization and Interpretation on Site	242
Hematology bone marrow case studies		BMD	Bone Marrow Cell Differential	139
Hematology case studies		VPBS	Virtual Periperal Blood Smear	143
Hematology peripheral blood case studies		EHE1	Expanded Virtual Peripheral Blood Smear	144
Hematopathology online education		HPATH, HPATH1	Hematopathology Online Education	145
Hemochromatosis (*HFE* gene)	X	MGL1	Molecular Genetics	248–249
Hemocytometer fluid count	X	HFC, HFCI	Hemocytometer Fluid Count	150–151
Hemoglobin		CBT	Cord Blood Testing	227
	X	**FH15**	Centrifugal Hematology	137
	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
	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	227
	X	**SO**	Blood Oximetry	94
		SOQ	Quality Cross Check, Blood Oximetry	44
Hemoglobin A_{1c}	X	GH2, GH5, GH5I	Hemoglobin A_{1c}	63
		GHQ	Quality Cross Check, Hemoglobin A_{1c}	42
		LN15	Hemoglobin A_{1c} Cal Ver/Lin	125
Hemoglobin A2 quantitation	X	HG	Hemoglobinopathy	140
Hemoglobin electrophoresis	X	HG	Hemoglobinopathy	140

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Hemoglobin, estimated	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
Hemoglobin F quantitation	X	HG	Hemoglobinopathy	140
Hemoglobin, plasma		PHG	Plasma Hemoglobin	76
Hemoglobin S/C	X	HGM	Hemoglobinopathies Genotyping	247
	X	MGL2	Molecular Genetics	248–249
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
Hemolytic complement, total		CH50	Total Hemolytic Complement	214
Hemosiderin, urine		SCM1	Special Clinical Microscopy	152
Heparin assay		CGS4	Coag Special, Series 4	162
Heparin-induced thrombocytopenia		CGE/CGEX	Coagulation, Extended	161
		CGS5	Coag Special, HIT	162
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
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	130
HER2 by immunohistochemistry	X	HER2	HER2 by Immunohistochemistry	281
HER2 by molecular testing		MTP	Multigene Tumor Panel	261
HER2, gastric		GHER2	Gastric HER2	281
HER2 gene amplification by FISH, hybridization and interpretation on site	X	CYH	Fluorescence In Situ Hybridization and Interpretation on Site, Breast Cancer	243
HER2 gene amplification by FISH, interpretation only		CYHI	Interpetation Only, *HER2* FISH, Breast Cancer	282
HER2 gene amplification by ISH	X	ISH2	In Situ Hybridization	258

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Herpes simplex virus (HSV)	X	**HC2**	HSV by DFA	197
	X	**HC4**	HSV Culture	197
		ID1	Nucleic Acid Amp, Viruses	197
	X	**ID5**	HSV, Molecular	198
		IDME	Meningitis/Encephalitis Panel	202
	X	**VR1**	Virology Culture	196
	X	**VR2**	Viral Antigen by DFA	196
	X	VR3	Antibody Detection-Infectious Disease Serology	205
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	HistoQIP	271
Histotechnology quality improvement, biopsy		HQIPBX, HQPBX1, HQBX2, HQBX3, HQBX4	HistoQIP Biopsy Series	276–277
Histotechnology quality improvement, central nervous system IHC		HQNEU	HistoQIP Central Nervous System IHC	272
Histotechnology quality improvement, IHC		HQIHC	HistoQIP IHC	274
Histotechnology quality improvement, mismatch repair IHC		HQMMR	HistoQIP Mismatch Repair IHC	275
Histotechnology quality improvement, non-small cell lung carcinoma IHC		HQNSC	HistoQIP Non-small Cell Lung Carcinoma IHC	276
Histotechnology quality improvement, ISH		HQISH	HistoQIP In Situ Hybridization (Kappa/Lambda)	272
Histotechnology quality improvement, melanoma IHC		HQMEL	HistoQIP Melanoma IHC	273
Histotechnology quality improvement, whole slide image		HQWSI	HistoQIP Whole Slide Image	274
HIV	X	HIVG, HV2	HIV Viral Load	199
		LN39	HIV Viral Load Cal Ver/Lin	130
HIV (cont.)	X	NAT	Nucleic Acid Testing	232
HIV genotyping		HIVG	HIV Viral Genotyping	199
HIV-1 p24 antigen	X	VM3	Viral Markers-Series 3	230
HIV-1 p24 antigen, **anti-HIV-1/2**	X	**VM6, VM6X**	Viral Markers-Series 6	231
HLA-A, -B, -C antibody identification	X	MX1B, MX1C, MX1E, MXB, MXC	HLA Analysis, Class I	236–237
	X	MX2B, MX2C, MX2E, MXB, MXC	HLA Analysis, Class II	236–237
HLA-(class I/II) antibody screen		MX1B, MX1C, MX1E, MX2B, MX2C, MX2E, MXB, MXC	HLA Analysis, Class I/II	236–237
HLA-(class I/II) crossmatching	X	MX1B, MX1C, MX1E, MXB, MXC	HLA Analysis, Class I	236–237
	X	MX2B, MX2C, MX2E, MXB, MXC	HLA Analysis, Class II	236–237
HLA-B*1502		PGX2	Pharmacogenetics	251
HLA-B27 typing	X	B27	HLA-B27 Typing	237
HLA-B*57:01		DADR1	Disease Association, Drug Risk	240
		PGX2	Pharmacogenetics	251
HLA-B*58:01		DADR1	Disease Association, Drug Risk	240
HLA-DQA1*03/DQB1*03:02		DADR2	Disease Association, Drug Risk	240
HLA-DQA1*05/DQB1*02		DADR2	Disease Association, Drug Risk	240
HLA molecular typing	X	DML	HLA Molecular Typing	237
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	287
	X	**CHPVJ**	Mixed Medium	287
	X	**CHPVK**	SurePath Preservative Fluid Transport Medium	287
	X	**CHPVM**	ThinPrep PreservCyt Transport Medium	287
		HPV	Digene Hybrid Capture Technology Only	197
		ISH	In Situ Hybridization	258
HSV	X	**HC2**	HSV by DFA	197
	X	**HC4**	HSV Culture	197
		ID1	Nucleic Acid Amp, Viruses	197
	X	**ID5**	Herpes Simplex Virus, Molecular	198
	X	**VR1**	Virology Culture	196

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
HSV (cont.)	X	**VR2**	Viral Antigen by DFA	196
	X	VR3	Antibody Detection-Infectious Disease Serology	205
Human chorionic gonadotropin (hCG), serum	X	**C1, C3, C3X, C4, CZ, CZ2X, CZX**	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
	X	**FP/FPX, FP1T**	Maternal Screen	87
	X	**HCG, IL**	Immunology	208
	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	134
Human chorionic gonadotropin (hCG),urine	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)		HIVG	HIV Genotyping	199
	X	HIVG, HV2	HIV Viral Load	199
		LN39	HIV Viral Load Cal Ver/Lin	130
Human metapneumovirus		ID2	Nucleic Acid Amp, Respiratory	198
		IDPN	Infectious Disease, Pneumonia Panel	203
	X	**IDR**	Infectious Disease, Respiratory Panel	202
Human papillomavirus (cytology) high-risk	X	**CHPVD**	Digene Specimen Transport Medium	287
	X	**CHPVJ**	Mixed Medium	287
	X	**CHPVK**	SurePath Preservative Fluid Transport Medium	287
Human papillomavirus (cytology) high-risk (cont.)	X	**CHPVM**	ThinPrep PreservCyt Transport Medium	287
		HPV	Digene Hybrid Capture Technology Only	197
		ISH	In Situ Hybridization	258
		CHPVJ	Mixed Medium	287
		CHPVM	ThinPrep PreservCyt Transport Medium	287
Human parechovirus		IDME	Meningitis/Encephalitis Panel	202
Huntington disease (*HTT* gene)	X	MGL2	Molecular Genetics	248–249
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		DFC	Drug-Facilitated Crime	108
		T	Toxicology	96
		UT	Urine Toxicology	96
Ibuprofen		T	Toxicology	96
		UT	Urine Toxicology	96
IDH1		GLI	Glioma	261
IDH2		GLI	Glioma	261
IgA	X	**IG/IGX**	Immunology, General	208
		LN7	Immunology Cal Ver/Lin	123
IgA, electrophoresis	X	SPE	Protein Electrophoresis	76
IgD		S2, S4	Immunology, Special	209
IgE	X	**IG/IGX**	Immunology, General	208
	X	**K/KK**	Ligand Assay, General	82
	X	**SE**	Diagnostic Allergy	213
IgE allergen-specific, quantitative		SE	Diagnostic Allergy	213

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
IgE multi-allergen screen	X	SE	Diagnostic Allergy	213
IGF-1 (somatomedin C)	X	BGS	Bone and Growth	85
	X	Y/YY	Ligand Assay, Special	84
IgG	X	**IG/IGX**	Immunology, General	208
		LN7	Immunology Cal Ver/Lin	123
		S2, S4	Immunology, Special	209
IgG subclass proteins		S2, S4	Immunology, Special	209
IgG, CSF	X	M, OLI	CSF Chemistry and Oligoclonal Bands	74
IgG, electrophoresis	X	SPE	Protein Electrophoresis	76
IGHV		IGHV	Mutation Analysis	258
IgM	X	**IG/IGX**	Immunology, General	208
		LN7	Immunology Cal Ver/Lin	123
IgM, electrophoresis	X	SPE	Protein Electrophoresis	76
IL-2		CTKN	Cytokines	212
IL-6		CTKN	Cytokines	212
IL-8		CTKN	Cytokines	212
IL-10		CTKN	Cytokines	212
IL28B		PGX1	Pharmacogenetics	251
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
Immature platelet fraction (IPF)		FH9, FH9P	Hematology, Auto Diff	136
Immature reticulocyte fraction (IRF)		RT, RT3, RT4	Reticulocyte	141
Immunohistochemistry		BRAFV	BRAF V600E	278
		CD30	CD30 Immunohistochemistry	279
		DPIHC	Dermatophathology Immunohistochemistry	278
		GHER2	Gastric HER2	281
	X	HER2	HER2 by Immunohistochemistry	281
		MK	Immunohistochemistry	278
		MMR	DNA Mismatch Repair	278
		PDL1	PDL1	279
		PM1	CD117 by Immunohistochemistry	279
	X	PM2	ER, PR by Immunohistochemistry	281
		PM3	CD20 by Immunohistochemistry	279
		PM5	Immunohistochemistry TMA	280
		PM6	Anaplastic Lymphoma Kinase IHC	280
In situ hybridization	X	ISH	In Situ Hybridization	258
	X	ISH2	In Situ Hybridization HER2	258
India ink		IND	India Ink	191
Infectious disease, pneumonia panel		IDPN	Infectious Disease, Pneumonia Panel	203
Infectious mononucleosis (IM)	X	**IL, IM**	Immunology	208
	X	IMW	Infectious Mononucleosis, Waived	209
Influenza virus		ID2	Nucleic Acid Amp, Resp	198
	X	**ID3**	Influenza A, Influenza B, RSV by NAA	198
		IDPN	Infectious Disease, Pneumonia Panel	203
	X	**IDR**	Infectious Disease, Respiratory Panel	202
		POC8	POC Influenza A/B Ag	52
	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	247
Instrument function		I	Instrumentation	132
Instrument linearity		I	Instrumentation	132
		LN11	Serum Ethanol Cal Ver/Lin	124
		LN12, LN12E	C-Reactive Protein Cal Ver/Lin	124
		LN13, 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
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		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
		LN24	Creatinine Accuracy Cal Ver/Lin	127
		LN25	Troponin I Cal Ver/Lin	127
		LN27	Troponin T Cal Ver/Lin	127

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Instrument linearity (cont.)		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
		LN3	TDM Cal Ver/Lin	121
		LN30	BNP Cal Ver/Lin	128
		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	129
		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	130
		LN39	HIV Viral Load Cal Ver/Lin	130
		LN40	Vitamin D Cal Ver/Lin	130
		LN41	Procalcitonin Cal Ver/Lin	130
		LN42	D-Dimer Cal Ver/Lin	131
		LN43	Lamellar Body Count Cal Ver/Lin	131
		LN44	Fibrinogen Cal Ver/Lin	131
		LN45	HCV Viral Load Cal Ver/Lin	130
		LN46	C-Peptide/Insulin Cal Ver/Lin	131
		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
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	131
Interferon (IFN) gamma		CTKN	Cytokines	212
Interleukin (IL)-1 beta		CTKN	Cytokines	212
International normalized ratio (INR)	X	CGB	Basic Coagulation	160
International normalized ratio (INR) (cont.)	X	CGL	Coagulation, Limited	160
		CGLQ	Quality Cross Check, Coagulation, Limited	47
		CGS1	Coag Special, Series 1	162
		CGS4	Coag Special, Series 4	162
		POC6	POC PT/INR, CoaguChek XS Plus	52
		WP10	Whole Blood Coagulation	168
	X	WP3, WP4, WP6, WP9	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	133
		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	213
Kaolin-activated CT		CGE/CGEX	Coagluation, Extended	161
Kappa/Lambda	X	ISH	In Situ Hybridization	258
Kappa/Lambda ratio		IG/IGX	Immunology, General	208
		S2, S4	Immunology, Special	209
Karyotype nomenclature	X	CY, CYBK	Cytogenetics	242
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

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Ketones, urine (cont.)		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
KIT		KIT	*KIT/PDGFRA*	260
		MTP	Multigene Tumor Panel	261
Klebsiella aerogenes		IDPN	Infectious Disease, Pneumonia Panel	203
Klebsiella oxytoca		IDPN	Infectious Disease, Pneumonia Panel	203
Klebsiella pneumoniae group		IDPN	Infectious Disease, Pneumonia Panel	203
KOH prep (skin)	X	CMMP	Clinical Microscopy, Misc	147
KOH prep (skin or vaginal)	X	FSM	Fungal Smear	191
KRAS	X	KRAS	Colorectal Cancer Mutation	260
	X	MTP	Multigene Tumor Panel	261
Laboratory preparedness exercise		LPX	Laboratory Preparedness Exercise	183
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
		LN13C	Blood Gas Cal Ver/Lin	124-125
		POC10, POC11	POC Competency Blood Gases	53
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	133
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Lactate dehydrogenase (LD) (cont.)		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
		SCO	Serum Carryover	134
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	131
Lamotrigine		T	Toxicology	96
		UT	Urine Toxicology	96
		ZE	Therapeutic Drug Monitoring, Extended	60
Large unclassified cells (LUC)		FH4, FH4P	Hematology, Auto Diff	
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	64
Lead (blood)	X	**BL**	Blood Lead	102
Lead, urine		TMU	Trace Metals, Urine	103
Legionella		LBAS	*Legionella* Ag	178
Legionella pneumophila		IDN, IDO	Nucleic Acid Amp, Organisms	201
		IDPN	Infectious Disease, Pneumonia Panel	203
	X	**IDR**	Infectious Disease, Respiratory Panel	202
Leukemia/lymphoma immunophenotype		FL3	Flow Cytometry	215
Leukemia/lymphoma interpretation only		FL5	Flow Cytometry Interpretation Only	216
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	224
Leukocyte-reduced RBC		TRC	Transfusion-Related Cell Count	224
Leukocyte, stool, Wright-Giemsa	X	CMMP	Clinical Microscopy, Misc	147
Levetiracetam		T	Toxicology	96
		UT	Urine Toxicology	96

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Levetiracetam (cont.)		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	133
		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	213
Lorazepam		DFC	Drug-Facilitated Crime	108

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Lorazepam (cont.)		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
Luteinizing hormone (LH)		ABS	Accuracy-Based Testosterone, Estradiol	113
		LN8	Reproductive Endocrinology Cal Ver/Lin	123
	X	Y/YY	Ligand Assay, Special	84
Lyme disease		TTD	Tick-Transmitted Disease	205
Lymphocyte immunophenotyping	X	FL, FL1	Flow Cytometry	215
Lymphoma by FISH		CYL	Fluorescence In Situ Hybridization and Interpretation on Site, Lymphoma	243
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	133
		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
Manganese, urine		TMU	Trace Metals, Urine	103

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Manganese, whole blood		TMWB	Trace Metals, Whole Blood	103
MCAD	X	IMD2	MCAD	249
MCH		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
		HE, HEP	Basic Hematology	136
MCHC		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
		HE, HEP	Basic Hematology	136
MCV		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
		HE, HEP	Basic Hematology	136
MECP2 deletion/ duplication analysis	X	RETT	RETT Syndrome Genotyping	251
MECP2 genotyping	X	RETT	RETT Syndrome Genotyping	251
MEN2 (multiple endocrine neoplasia type 2)	X	MGL3	Molecular Genetics	248–249
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
Meprobamate (cont.)		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Meprobamate/ Carisoprodol		UDS, UDS6	Urine Drug Screen	98
Mercury, urine		TMU	Trace Metals, Urine	103
Mercury, whole blood		TMWB	Trace Metals, Whole Blood	103
Metabolic disease testing		BGL	Biochemical Genetics	245
Metanephrine	X	N/NX	Urine Chemistry, Special	69
Methadone		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
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

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Methemoglobin	X	SO	Blood Oximetry	94
		SOQ	Quality Cross Check, Blood Oximetry	44
Methicillin-resistant *Staphylococcus aureus* (MRSA)		BCS1	Blood Culture *Staphylococcus aureus*	179
		IDN, IDO	Nucleic Acid Amp, Organisms	201
		MRS	Methicillin-resistant *S. aureus* Screen	182
		MRS2M	MRSA Screen, Molecular, 2 Challenge	182
	X	**MRS5**	Methicillin-resistant *S. aureus* Screen	182
	X	**MRS5M**	MRSA Screen, Molecular, 5 Challenge	182
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

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Methylenetetra-hydrofolate reductase (*MTHFR* gene)	X	MGL1	Molecular Genetics	248–249
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	261
Microalbumin, urine		LN20	Urine AlbuminCal Ver/Lin	126
	X	U	Urine Chemistry	68
	X	UMC	Urine Albumin (Microalbumin)/Creatinine	153
Microarray, constitutional disorders		CYCGH	Constitutional Microarray Analysis	244
Microarray, neoplastic disorders		CYCMA	Cytogenomic Microarray Analysis for Oncologic Abnormality	244
Microsatellite instability		MSI	Microsatellite Instability	258
Microtiter plate reader linearity		I	Instrumentation	132
Midazolam		DFC	Drug-Facilitated Crime	108
Minimal residual disease		BALL	B-ALL Minimal Residual Disease	216
		MRD	Minimal Residual Disease, *BCR/ABL1* p210	262
		MRD1	Minimal Residual Disease, *BCR/ABL1* p190	262
		MRD2	Minimal Residual Disease, *PML/RARA*	262
Mirtazapine		T	Toxicology	96
		UT	Urine Toxicology	96
Mite identification		TMO	Ticks, Mites, and Other Arthropods	194
Mitochondrial cytopathies	X	IMD3	Mitochondrial Cytopathies	249
Mitochondrial DNA deletion syndromes	X	IMD1	Mitochondrial DNA Deletion Syndromes	249
Mixing studies, APTT		CGE/CGEX	Coagulation, Extended	161
		CGS1	Coag Special, Series 1	162
Mixing studies, PT		CGE/CGEX	Coagulation, Extended	161
MLH1 promoter methylation analysis		MSI	Defective DNA Mismatch Repair/Hereditary Nonpolyposis Colorectal Cancer (HNPCC)	258
Modified acid-fast stain	X	P, P3, P4, P5	Parasitology	192
Mold identification	X	**F**	Mycology and Aerobic Actinomycetes	189

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Molecular genetics	X	MGL1, MGL2, MGL3, MGL4, MGL5	Molecular Genetics	248–249
Molecular hematologic oncology		MHO, MHO1, MHO2, MHO3, MHO5	Molecular Hematologic Oncology	259, 262
Molecular HLA typing	X	DML	HLA Molecular Typing	237
Molecular typing		IDN, IDO	Nucleic Acid Amp, Organisms	201
Monitoring engraftment	X	ME	Monitoring Engraftment	239
Mononuclear cell count		CBT	Cord Blood Testing	227
		SCP	Stem Cell Processing	227
Moraxella catarrhalis		IDPN	Infectious Disease, Pneumonia Panel	203
Morphine		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
M-protein (paraprotein) identification	X	SPE	Protein Electrophoresis	76
MPV		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
		HE, HEP	Basic Hematology	136
MRSA		BCS1	Blood Culture *Staphylococcus aureus*	179
		IDN, IDO	Nucleic Acid Amp, Organisms	201
		MRS	Methicillin-resistant *S. aureus* Screen	182
		MRS2M	MRSA Screen, Molecular, 2 Challenge	182
	X	**MRS5**	Methicillin-resistant *S. aureus* Screen	182
	X	**MRS5M**	MRSA Screen, Molecular, 5 Challenge	182
Mucolipidosis IV (*MCOLN1* gene)	X	MGL4	Molecular Genetics	248–249
Mucopolysaccharide (Glycosaminoglycan)	X	BGL	Biochemical Genetics	245
Multiple endocrine neoplasia type 2 (*RET* gene)	X	MGL3	Molecular Genetics	248–249
Mumps-IgG		VR3M	Virology	205
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	213
Mycobacterium tuberculosis identification and resistance detection		MTBR	Molecular MTB Identification and Resistance Detection	188
Mycophenolic acid	X	MPA	Mycophenolic Acid	60
Mycoplasma genitalium		MGEN	*Mycoplasma genitalium*, Molecular	185
Mycoplasma pneumoniae		IDN, IDO	Nucleic Acid Amp, Organisms	201
		IDPN	Infectious Disease, Pneumonia Panel	203
	X	**IDR**	Infectious Disease, Respiratory Panel	202
		VR3	Antibody Detection, Infectious Disease Serology	205
Myoglobin	X	CRT, CRTI	Cardiac Markers	62
		CRTQ	Quality Cross Check, Cardiac Markers	42
		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 (*DMPK* gene)	X	MGL2	Molecular Genetics	248–249
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

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Nasal smears, eosinophil	X	CMMP	Clinical Microscopy, Misc	147
Neisseria gonorrhoeae	X	**D3**	GC Cultures	175
	X	**HC6/HC6X**	*C. trachomatis*/GC by Nucleic Acid Amp	186
	X	**HC7**	*C. trachomatis*/GC DNA by NAA	186
	X	**RMC**	Routine Microbiology Combination	176
Neisseria meningitidis		IDME	Meningitis/Encephalitis Panel	202
Neoplastic cellularity		NEO	Neoplastic Cellularity	259
Neuropathology		NP/NP1	Neuropathology Program	284
Neutral fats		FCFS	Fecal Fat	75
Next-generation sequencing		NGS	Next-Generation Sequencing	254
		NGSB1	NGS Bioinformatics for Illumina Platforms	255
		NGSB2	NGS Bioinformations for Ion Torrent Platforms	255
		NGSBV	NGS Bioinformatics Somatic Validated Materials	257
		NGSE	NGS Undiagnosed Disorders-Exome	256
		NGSHM	Next Generation Sequencing, Hematologic Malignancies	255
		NGSST	Next Generation Sequencing, Solid Tumor	254
Nicotine		NTA	Nicotine and Tobacco Alkaloids	102
		T	Toxicology	96
		UT	Urine Toxicology	96
Niemann-Pick type A/B (*SMPD1* gene)	X	MGL4	Molecular Genetics	248–249
NIPT		NIPT	Noninvasive Prenatal Testing	88
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	290
Nongynecologic cytopathology (cont.)		FNAG/FNAG1	Fine-Needle Aspiration, Glass	291
		NGC/NGC1	Nongynecologic Cytopathology Education Program	289
Noninvasive prenatal testing		NIPT	Noninvasive Prenatal Testing	88
Norbuprenorphine		DFC	Drug-Facilitated Crime	108
		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
		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
		OFD	Oral Fluid for Drugs of Abuse	100
		T	Toxicology	96
		UDC	Forensic Urine Drug Testing, Confirmatory	99
		UT	Urine Toxicology	96
Norfluoxetine		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Norfluoxetine (cont.)		T	Toxicology	96
		UT	Urine Toxicology	96
Norhydrocodone		DMPM	Drug Monitoring for Pain Management	107
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	204
	X	**GIP5**	Gastrointestinal Panel	204
		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
		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
Norvenlafaxine		DFC	Drug-Facilitated Crime	108
Norverapamil		T	Toxicology	96
		UT	Urine Toxicology	96
Novel opioids and benzodiazepines		NOB	Novel Opioids and Benzodiazepines	105
NRAS		MTP	Multigene Tumor Panel	261
nRBC		FH3, FH3P, FH9, FH9P, FH13, FH13P	Hematology, Auto Diff	136
N-telopeptide (NTX)		BMV6	Bone Markers and Vitamin	86
	X	BU	Bone and Mineral, Urine	85
NT-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
		LN30	BNP Cal Ver/Lin	128
Nucleated cells, total		ABF3	Automated Body Fluid	148
		CBT	Cord Blood Testing	227
		SCP	Stem Cell Processing	227
Nucleated red blood cell count		FH3, FH3P, FH9, FH9P, FH13, FH13P	Hematology, Auto Diff	136
Nucleated red cells, total		CBT	Cord Blood Testing	227
		SCP	Stem Cell Processing	227
Nucleic acid amplification		BSTS	Bacterial Strain Typing *Staphylococcus*	178
	X	HBVL, HBVL5, HCV2	Hepatitis Viral Load	198
	X	**HC6/HC6X**	*C. trachomatis*/GC by Nucleic Acid Amp	186
	X	**HC7**	*C. trachomatis*/GC DNA by NAA	186
	X	HIVG, HV2	HIV Viral Load	199
		ID1, ID1T	Nucleic Acid Amp, Viruses	197
		ID2	Nucleic Acid Amp, Respiratory	198
	X	**ID3**	Influenza A, Influenza B, RSV by NAA	198
		IDN, IDO	Nucleic Acid Amp, Organisms	201
		MRS2M	MRSA Screen, Molecular, 2 Challenge	182
	X	**MRS5M**	MRSA Screen, Molecular, 5 Challenge	182
		SP, SPN, SP1	Stool Pathogens	184
		VLS, VLS2	Viral Load	199
		VRE	Vancomycin-Resistant *Enterococcus*	187
Nucleic acid testing	X	NAT	Nucleic Acid Testing	232
Nugent scoring		VS2	Vaginitis Screen, Virtual Gram Stain	186
Occult blood		OCB	Occult Blood	151
		OCBQ	Quality Cross Check, Occult Blood	46

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Occult blood (cont.)		POC9	POC Fecal Occult Blood	52
Occult blood, gastric		GOCB	Gastric Occult Blood	150
Ocular micrometer check		I	Instrumentation	132
O-desmethyltramadol		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
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	134
Organic acids, urine qualitative	X	BGL	Biochemical Genetics	245
Organic acids, urine quantitative		BGL	Biochemical Genetics	245
Osmolality, measured	X	C3, C3X, CZ, CZ2X, CZX	Chemistry and TDM	56–58
		CZQ	Quality Cross Check, Chemistry and TDM	41
		IFS	Interfering Substances	133
		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	132
Osteocalcin		BGS	Bone and Growth	85
Oxalate		KSA	Kidney Stone Risk Assessment	69
Oxazepam		DFC	Drug-Facilitated Crime	108

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Oxazepam (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
		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
		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	279
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

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Parainfluenza virus		ID2	Nucleic Acid Amp, Respiratory	198
		IDPN	Infectious Disease, Pneumonia Panel	203
	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	233
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
		LN13, LN13C	Blood Gas Cal Ver/Lin	124-125
		POC10, POC11	POC Competency Blood Gases	53
PDGFRA		KIT	*KIT/PDGFRA*	260
		MTP	Multigene Tumor Panel	261
PDL1		PDL1	PDL1	279
Pentobarbital		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Performance improvement program in surgical pathology		PIP/PIP1, PIPW/PIPW1	Performance Improvement Program in Surgical Pathology	264–265
Peripheral blood cell identification		EHE1	Expanded Virtual Peripheral Blood Smear	144
Peripheral blood smear, virtual		VPBS	Virtual Peripheral Blood Smear	143
pH		AFL	Amniotic Fluid Leakage	148
	X	**AQ, AQ2, AQ3, AQ4**	Aqueous Blood Gas	92

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
pH (cont.)		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
		LN13, LN13C	Blood Gas Cal Ver/Lin	124-125
		POC10, POC11	POC Competency Blood Gases	53
pH, gastric		GOCB	Gastric Occult Blood	150
pH interpretation		AFL	Amniotic Fluid Leakage	148
pH meters		I	Instrumentation	132
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
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

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
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	134
		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	133
		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	261
Pinworm prep	X	CMMP	Clinical Microscopy, Misc	147
Pipette calibration-gravimetric		I	Instrumentation	132
Plasma cell neoplasms		PCNEO	Flow Cytometry, Plasma Cell Neoplasms	217
Plasma hemoglobin		PHG	Plasma Hemoglobin	76
Plasminogen activator inhibitor		CGE/CGEX	Coagulation, Extended	161
Plasminogen activator inhibitor (PAI)-1 (*SERPINE1* gene)		MGL1	Molecular Genetics	248–249
Plasminogen antigen		CGE/CGEX	Coagulation, Extended	161
Platelet aggregation		PF	Platelet Function	166
Platelet antibody detection	X	PS	Platelet Serology	225

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Platelet calculator		TRC	Transfusion-Related Cell Count	224
Platelet count	X	**FH15**	Centrifugal Hematology	137
	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
	X	**HE, HEP**	Basic Hematology	136
		LN9	Hematology Cal Ver/Lin	123
Platelet count (estimated)		EHE1	Expanded Virtual Peripheral Blood Smear	144
		VPBS	Virtual Peripheral Blood Smear	143
Platelet count (platelet-rich plasma)	X	TRC	Transfusion-Related Cell Count	224
Platelet crossmatch		PS	Platelet Serology	225
Platelet function		PF1	Platelet Function	166
Platelet mapping		PLTM	Platelet Mapping	169
Plesiomonas shigelloides		GIP	Gastrointestinal Panel	204
	X	**GIP5**	Gastrointestinal Panel	204
PML/RARA		MHO2, MHO3	Molecular Hematologic Oncology	262
		MRD2	Minimal Residual Disease	262
PNA FISH—*Staphylococcus*		PNA1	PNA FISH for *Staphylococcus*	179
PNA FISH—yeast		PNA2	PNA FISH for Yeast	179
Pneumocystis detection		PCP1	*Pneumocystis jiroveci*, Calcofluor White Stain	191
		PCP2	*Pneumocystis jiroveci*, DFA Stain	191
		PCP4	*Pneumocystis jiroveci*, GMS Stain	191
PNH immunophenotype		PNH	Paroxysmal Nocturnal Hemoglobinuria, RBC	217
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
Post-immunotherapy analysis, flow cytometry		FL6	Post-Immunotherapy Flow Analysis	216

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Postanalytical DNA sequencing		SEC	DNA Sequencing Count	250
Postvasectomy sperm count, automated		PV1	Postvasectomy Sperm Count	156
Postvasectomy sperm count, manual	X	PV	Postvasectomy Sperm Count	156
Postvasectomy sperm presence/absence, manual	X	PV	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	133
		LN13C	Blood Gas Cal Ver/Lin	124
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
		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	236–237
		MX2B, MX2C, MX2E, MXB, MXC	HLA Analysis, Class II	236–237
Prader-Willi/Angelman syndrome	X	MGL1	Molecular Genetics	248–249
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	209
Predictive markers by immunohistochemistry		GHER2	Gastric HER2	281
	X	HER2	HER2 by Immunohistochemistry	281
		PM1	CD117 by Immunohistochemistry	279

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Predictive markers by immunohistochemistry (cont.)	X	PM2	ER, PgR by Immunohistochemistry	281
		PM3	CD20 by Immunohistochemistry	279
		PM5	Immunohistochemistry TMA	280
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
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	281
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

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Propoxyphene (cont.)		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 C		CGE/CGEX	Coagulation, Extended	161
		CGS2	Coag Special, Series 2	162
		LN35	Thrombophilia Cal Ver/Lin	129
Protein, confirmatory urine		DSC	Dipstick Confirmatory	149
Protein electrophoresis, serum, interpretation		SPE	Protein Electrophoresis	76
Protein S		CGE/CGEX	Coagulation, Extended	161
		CGS2	Coag Special, Series 2	162
Protein, CSF	X	M, OLI	CSF Chemistry and Oligoclonal Bands	74
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	133
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
		SPE	Lipoprotein and Protein Electrophoresis	76
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

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Proteus spp.		IDPN	Infectious Disease, Pneumonia Panel	203
Prothrombin mutation (*F2* gene)	X	MGL1	Molecular Genetics	248–249
	X	TPM	Thrombophilia Mutations	252
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
		CGS4	Coag Special, Series 4	162
		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
Pseudomonas aeruginosa		IDPN	Infectious Disease, Pneumonia Panel	203
PTEN		GLI	Glioma	261
Pyridinoline (PYD)		BU	Bone and Mineral, Urine	85
Q-PROBES		QP201	Technical Competency Assessment of Peripheral Blood Smears	25
		QP202	Red Blood Cell Utilization: Single and Double Unit Transfusions	26
		QP203	Inpatient Test Utilization and Volume Benchmarking	27
		QP204	Turnaround Time for Image-Guided Breast Needle Biopsy Specimens	28
Q-TRACKS		QT1	Patient Identification Accuracy	31

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Q-TRACKS (cont.)		QT10	Critical Values Reporting	34
		QT15	TATs of Troponin	35
		QT16	Corrected Results	36
		QT17	Outpatient Order Entry Errors	36
		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
Quetiapine		DFC	Drug-Facilitated Crime	108
		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	**D6**	Rapid Group A Strep	177
	X	D9	Rapid Group A Strep, Waived	177
	X	**MC4**	Urine Colony Count Combination	176
	X	**RMC**	Routine Microbiology Combination	176
RBC automated count, fluid		ABF1, ABF2, ABF3	Automated Body Fluid	148
RBC count		ABF1, ABF2, ABF3	Automated Body Fluid	148
RBC count (cont.)	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
	X	**HE, HEP**	Basic Hematology	136
		LN9	Hematology Cal Ver/Lin	123
RBC count, automated, urine (quantitative)		UAA, UAA1	Automated Urinalysis	149
RBC folate	X	FOL	RBC Folate	88
RBC manual count, fluid	X	HFC, HFCI	Hemocytometer Fluid Count	150–151
RBC morphology		EHE1	Expanded Virtual Peripheral Blood Smear	144
		VPBS	Virtual Peripheral Blood Smear	143
RDW		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
		HE, HEP	Basic Hematology	136
Red blood cell antigen detection		J, J1	Transfusion Medicine	220
Red blood cell antigen genotyping		RAG	Red Blood Cell Antigen Genotyping	223
Red blood cell antigen typing		RBCAT	Red Blood Cell Antigen Typing	223
Reducing substance, urine	X	CMP, CMP1	Clinical Microscopy	146
		CMQ	Quality Cross Check, Urinalysis	46
	X	HCC2	Waived Combination	66
		POC3	POC Urine Dipstick Competency	52
Refractometer check		I	Instrumentation	132
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
		IDPN	Infectious Disease, Pneumonia Panel	203

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Respiratory syncytial virus (RSV) (cont.)	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	RT, RT2, RT3, RT4	Reticulocyte	141
		RTQ, RT3Q, RT4Q	Quality Cross Check, Reticulocyte	45
Reticulocyte count, percent		LN18, LN19	Reticulocyte Cal Ver/Lin	126
	X	RT, RT2, RT3, RT4	Reticulocyte	141
		RTQ, RT3Q, RT4Q	Quality Cross Check, Reticulocyte	45
Reticulocyte hemoglobin (RET-He)		RT4	Reticulocyte	141
Reticulocyte hemoglobin concentration (CHr)		RT3	Reticulocyte	141
RETT syndrome	X	RETT	RETT Syndrome Genotyping	251
RETT syndrome *MECP2* duplication deletion analysis	X	RETT	RETT Syndrome Genotyping	251
RhD	X	MGL2	Molecular Genetics	248–249
RhD typing	X	**J, J1**	Transfusion Medicine	220
	X	**JAT**	Transfusion Medicine, Automated	221
		JATE1	Transfusion Medicine, Automated, Educational	221
		JATQ	Quality Cross Check, Transfusion Medicine	49
		TMCA	Transfusion Medicine, Competency Assessment	225
Rheumatoid factor	X	**IL, RF/RFX**	Immunology	208
Rheumatoid factor isotypes, IgA, IgG, and IgM		CCP	Cyclic Citrullinated Peptide Antibody	212
Rhinovirus		ID2	Nucleic Acid Amp, Respiratory	198
	X	**IDR**	Infectious Disease, Respiratory Panel	202
Rhinovrus/enterovirus		IDPN	Infectious Disease, Pneumonia Panel	203
RNA sequencing		RNA	RNA Sequencing	260
Rotavirus		GIP	Gastrointestinal Panel	204
	X	**GIP5**	Gastrointestinal Panel	204
		SP, SPN	Stool Pathogens	184
	X	**VR4**	Viral Antigen Detection by EIA and Latex	196

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
RSV		ID2	Nucleic Acid Amp, Respiratory	198
	X	**ID3**	Influenza A, Influenza B, RSV by NAA	198
		IDPN	Infectious Disease, Pneumonia Panel	203
	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	208
Rubeola antibody (English measles)	X	VR3	Antibody Detection-Infectious Disease Serology	205
Rufinamide		ZE	Therapeutic Drug Monitoring, Extended	60
Rupture of fetal membranes		ROM1	Placental Alpha Microglobulin 1 (PAMG-1)	152
Russell's viper venom time, dilute		CGS1	Coagulation Special, Series 1	162
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	204
	X	**GIP5**	Gastrointestinal Panel	204
Sapovirus (I, II, IV, V)		GIP	Gastrointestinal Panel	204
	X	**GIP5**	Gastrointestinal Panel	204
Sarcoma by FISH		CYK	Fluorescence In Situ Hybridization	243
Sarcoma translocation		SARC	Sarcoma Translocation	259
Scl-70 (anti-DNA topoisomerase)		RDS	Rheumatic Disease Special	213
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

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Selenium, whole blood		TMWB	Trace Metals, Whole Blood	103
Semen analysis		ASA, SM	Semen Analysis	156
	X	SC, SC1, SV, PV	Semen Analysis	156
	X	SMCD	Semen Analysis, Online	156
		SM1CD, SM2CD	Semen Analysis, Online	156
SERPINA1 genotyping	X	AAT	Alpah-1 Antitrypsin Genotyping	245
Serratia marcescens		IDPN	Infectious Disease, Pneumonia Panel	203
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	214
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	184
Shiga-like toxin producing *E. coli* (STEC)		GIP	Gastrointestinal Panel	204
		GIP5	Gastrointestinal Panel	204
Shigella		GIP	Gastrointestinal Panel	204
	X	**GIP5**	Gastrointestinal Panel	204
Sickle cell screen, qualitative	X	HG	Hemoglobinopathy	140
	X	SCS	Sickle Cell Screen	142
Sirolimus (Rapamycin)	X	CS	Immunosuppressive Drugs	59
SLCO1B1		PGX	Pharmacogenetics	251
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	133
		LN13C	Blood Gas Cal Ver/Lin	124-125
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
Sodium (cont.)		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
		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	280
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	132
Sperm count	X	SMCD	Semen Analysis, Online	156
Sperm count, automated		PV1	Semen Analysis	156
	X	SC1	Semen Analysis	156
Sperm count, manual	X	PV	Postvasectomy Sperm Count	156
	X	SC	Semen Analysis	156
Sperm morphology		SM	Semen Analysis	156
		SM1CD	Semen Analysis, Online	156
Sperm motility		SMCD	Semen Analysis, Online	156
Sperm presence/ absence		SC	Semen Analysis	156
Sperm presence/ absence, postvasectomy	X	PV	Semen Analysis	156
Sperm viability		SM2CD	Semen Analysis, Online	156
	X	SV	Semen Analysis	156
Spinal fluid meningitis panel	X	D	Bacteriology	173
Spinal muscular atrophy (*SMN1* and *SMN2* genes)	X	MGL2	Molecular Genetics	248–249
Spinocerebellar ataxia (*ATXN1*, *ATXN2*, *ATXN3*, *CACNA1A*, and *ATXN7* genes)	X	MGL2	Molecular Genetics	248–249
Split fats		FCFS	Fecal Fat	75

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Staphylococcus aureus		IDPN	Infectious Disease, Pneumonia Panel	203
Staphylococcus aureus-blood culture		BCS1	Blood Culture *Staphylococcus aureus*	179
STEC (Shiga-like toxin producing *E. coli*)		GIP	Gastrointestinal Panel	204
		GIP5	Gastrointestinal Panel	204
Strep screen		POC4	POC/Waived Strep Screen Competency	52
Streptococcus agalactiae	X	**D8**	Group B Strep	178
		IDME	Meningitis/Encephalitis Panel	202
		IDPN	Infectious Disease, Pneumonia Panel	203
Streptococcus pneumoniae		IDME	Meningitis/Encephalitis Panel	202
		IDPN	Infectious Disease, Pneumonia Panel	203
		SBAS	*S. pneumoniae* Ag Detection	178
Streptococcus pyogenes	X	**D**	Bacteriology	173
	X	**D1**	Throat	175
	X	**D6**	Rapid Group A Strep	177
	X	D9	Rapid Group A Strep, Waived	177
		IDPN	Infectious Disease, Pneumonia Panel	203
	X	**MC4**	Urine Colony Count Combination	176
	X	**RMC**	Routine Microbiology Combination	176
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	267
		PIP/PIP1, PIPW/PIPW1	Performance Improvement Program in Surgical Pathology	264–265
		VBP/VBP1	Online Virtual Biopsies Program	266
Synthetic cannabinoid/ designer drugs		SCDD	Synthetic Cannabinoid/ Designer Drugs	105
Syphilis	X	**G**	Syphilis Serology	214
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

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
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
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)		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)		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		DFC	Drug-Facilitated Crime	108
		DMPM	Drug Monitoring for Pain Management	107
Tapentadol-O-sulfate		DMPM	Drug Monitoring for Pain Management	107
Tay-Sachs (*HEXA* gene)	X	MGL4	Molecular Genetics	248–249
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

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Temazepam (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
		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, measured		DY	Ligand Assay, Special	84
Testosterone, free, measured	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**	Throat	175
	X	**MC4**	Urine Colony Count Combination	176
	X	**RMC**	Routine Microbiology Combination	176
Thrombin time		CGE/CGEX	Coagulation, Extended	161
		CGS4	Coag Special, Series 4	162
		DBGN	Dabigatran	163
Thrombophilia mutations	X	TPM	Thrombophilia Mutations	252
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
Thyroid-stimulating hormone (TSH) (cont.)		LN5	Ligand Assay Cal Ver/Lin	121-122
		LN5S	Ligand Assay, Siemens Cal Ver/Lin	121-122
Thyroxine (T4), 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 (T4), 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	194
Tissue parasite identification	X	**BP**	Blood Parasite	193
	X	**P**	Parasitology	192
		PEX	Expanded Parasitology	193
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		DFC	Drug-Facilitated Crime	108
		T	Toxicology	96
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	133
		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
		DSC	Dipstick Confirmatory	149
	X	HCC2	Waived Combination	66
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	214
Total iron binding capacity, measured	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	227
		SCP	Stem Cell Processing	227
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	227
		SCP	Stem Cell Processing	227
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	133
		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	X	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	288
Toxicology, serum, qualitative	X	SDS	Serum Drug Screen	101
	X	T	Toxicology	96
Toxicology, urine, qualitative	X	DMPM	Drug Monitoring for Pain Management	107
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
Toxicology, urine, qualitative/quantitative	X	UDC	Forensic Urine Drug Testing, Confirmatory	99
Toxoplasma gondii	X	VR3	Antibody Detection-Infectious Disease Serology	205
TPMT		PGX3	Pharmacogenetics	251
Tramadol		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
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	209
Transfusion medicine		ETME1	Expanded Transfusion Medicine Exercises	229
		EXM, EXM2	Electronic Crossmatch	221–222
	X	**J, J1**	Transfusion Medicine	220
	X	**JAT**	Transfusion Medicine, Automated	221
		JATE1	Transfusion Medicine, Automated	221
		JE1	Transfusion Medicine, Education	220
		TMCA	Transfusion Medicine, Competency Assessment	225
		TMCAD	Transfusion Medicine, Competency Assessment	225
		TMCAE	Transfusion Medicine, Competency Assessment	226
		TMCAF	Transfusion Medicine, Competency Assessment	226
	X	TRC	Transfusion-Related Cell Count	224
Trazodone metabolite (m-CPP)		DFC	Drug-Facilitated Crime	108

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Trazodone		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Treponema pallidum	X	**G**	Syphilis Serology	214
Trichomonas vaginalis		MVP	Molecular Vaginal Panel	185
		TVAG	*Trichomonas vaginalis*, Molecular	186
	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	64
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120
		LN2BV	Chemistry, Lipid, Enzyme all Beckman except AU, Vitros Cal Ver/Lin	120
Triiodothyronine (T3), 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
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

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
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
		CRTQ	Quality Cross Check, Cardiac Markers	42
		LN25	Troponin I Cal Ver/Lin	127
		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	212
UGT1A1		PGX3	Pharmacogenetics	251
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
		FLD	Body Fluid	72
		FLDQ	Quality Cross Check, Body Fluid Chemistry	42
		IFS	Interfering Substances	133
		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	183
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	133
		LN2	Chemistry, Lipid, Enzyme Cal Ver/Lin	120

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Uric acid (cont.)		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
	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	176
		MC4	Urine Colony Count Combination	176
Urine crystals identification		URC	Crystals	149
Urine crystals, semiquantitative		UAA	Automated Urinalysis	149
Urine culture	X	**D2**	Urine Culture	175
		MC3	Urine Colony Count	176
	X	**MC4**	Urine Colony Count Combination	176
	X	**RMC**	Routine Microbiology Combination	176
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 eosinophils, wright stain		SCM1	Special Clinical Microscopy	152
Urine hCG, qualitative	X	UHCG	Urine hCG	152
Urine hemosiderin, prussian blue stain		SCM1	Special Clinical Microscopy	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

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Urobilinogen (cont.)		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 and Interpretation on Site, Urothelial Carcinoma	242
Vaginal wet preparations (clue cell, epithelial cell, trichomonas, or yeast)	X	CMMP	Clinical Microscopy, Misc	147
Vaginitis screen		BV	Bacterial Vaginosis	184
		MVP	Molecular Vaginal Panel	185
	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	252
Varicella-zoster virus (VZV)		ID1	Nucleic Acid Amplification	197
	X	**ID5**	Varicella-Zoster Virus, Molecular	198
		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	205

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
Vascular endothelial growth factor (VEGF)		CTKN	Cytokines	212
Venlafaxine		T	Toxicology	96
		UT	Urine Toxicology	96
Verapamil		T	Toxicology	96
		UT	Urine Toxicology	96
Viability		CBT	Cord Blood Testing	227
		SCP	Stem Cell Processing	227
Vibrio cholerae		GIP	Gastrointestinal Panel	204
	X	**GIP5**	Gastrointestinal Panel	204
Viral antigen detection	X	**HC2**	HSV by DFA	197
		POC8	POC Influenza A/B Ag	52
	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	**ID5**	HSV, VZV—Molecular	198
	X	**IDR**	Infectious Disease, Respiratory Panel	202
	X	**VR1**	Virology Culture	196
Virtual biopsy program, online		VBP/VBP1	Online Virtual Biopsies Program	266
Virtual gram stain		VGS1	Virtual Gram Stain Basic	177
		VGS2	Virtual Gram Stain Advanced	177
Virtual peripheral blood smear		VPBS	Virtual Peripheral Blood Smear	143
Viscoelastic studies		VES	Viscoelastic Studies	166
Viscosity		V	Viscosity	214
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, 1, 25 dihydroxy		BMV1	Bone Markers and Vitamins	86
Vitamin D, 25-OH	X	ABVD	Accuracy-Based Vitamin D	85
		LN40	Vitamin D Cal Ver/Lin	130
	X	VITD	25-OH Vitamin D	84
Vitamin E		BMV4	Bone Markers and Vitamins	86
VKORC1		PGX	Pharmacogenetics	251
Volatiles	X	AL1	Whole Blood Alcohol/ Volatiles	101
	X	AL2	Serum Alcohol/Volatiles	101
von Willebrand factor		CGE/CGEX	Coagulation, Extended	161
		CGS3	Coag Special, Series 3	162
		LN37	von Willebrand Factor Ag Cal Ver/Lin	129
Voriconazole		AFD	Antifungal Drugs Monitoring	106
VZV		ID1	Nucleic Acid Amplification	197
	X	**ID5**	Varicella-Zoster Virus, Molecular	198
	X	**VR1**	Virology Culture	196
	X	**VR2**	Viral Antigen Detection by DFA	196
	X	VR3	Antibody Detection, Infectious Disease Serology	205
Wavelength and photometric calibration		I	Instrumentation	132
WBC automated count (fluid)		ABF1, ABF2, ABF3	Automated Body Fluid	148
WBC count		ABF1, ABF2, ABF3	Automated Body Fluid	148
		CBT	Cord Blood Testing	227
	X	**FH15**	Centrifugal Hematology	137
	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
		FL4	Flow Cytometry CD34+	215
	X	**HE, HEP**	Basic Hematology	136
		LN9	Hematology Cal Ver/Lin	123
	X	**RWBC**	Rapid Total White Blood Cell Count	140
		SCP	Stem Cell Processing	227
WBC count (leukocyte-reduced platelets)		TRC	Transfusion-Related Cell Count	224
WBC count (leukocyte-reduced RBCs)		TRC	Transfusion-Related Cell Count	224
WBC count (urine)		UAA, UAA1	Automated Urinalysis	149
WBC differental (2-part)	X	**FH15**	Centrifugal Hematology	137
WBC differential (manual)		EHE1	Expanded Virtual Peripheral Blood Smear	144
		VPBS	Virtual Peripheral Blood Smear	143

Analyte/Procedure	LAP ENR	Program Code	Description	Pg
WBC differential, automated	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
WBC differential, body fluid		VBF	Virtual Body Fluid	148
WBC manual count (fluid)	X	HFC, HFCI	Hemocytometer Fluid Count	150–151
West Nile virus	X	NAT	Nucleic Acid Testing	232
Worm identification		WID	Worm Identification	194
Yeast identification	X	**F**	Mycology and Aerobic Actinomycetes	189
	X	**F1**	Yeast	189
	X	**F3**	*Candida* Culture	190
Yersinia enterocolitica		GIP	Gastrointestinal Panel	204
	X	**GIP5**	Gastrointestinal Panel	204
Zaleplon		DFC	Drug-Facilitated Crime	108
ZAP-70		ZAP70	ZAP-70 Analysis by Flow Cytometry	218
Zika virus		VBDM	Vector-Borne Disease—Molecular	200
Zinc	X	R	Trace Metals	78
Zinc, urine		TMU	Trace Metals, Urine	103
Zinc, whole blood		TMWB	Trace Metals, Whole Blood	103
Ziprasidone		DFC	Drug-Facilitated Crime	108
Zolpidem		DFC	Drug-Facilitated Crime	108
		FTC	Forensic Toxicology, Criminalistics	104
		T	Toxicology	96
		UT	Urine Toxicology	96
Zonisamide		ZE	Therapeutic Drug Monitoring, Extended	60
Zopiclone/Eszopiclone		DFC	Drug-Facilitated Crime	108

23 Program Code Page Index

Benefit from the most comprehensive range of scientifically developed programs.

- More than 650 Surveys and anatomic pathology education programs
- 25 new proficiency testing and quality improvement programs in 2019
- 600 experts in laboratory medicine support CAP offerings

Program Code Page Index

Program Code	Pg	Program Code	Pg	Program Code	Pg	Program Code	Pg	Program Code	Pg
A2MG	210	APT	150	BSTS	178	CRTQ	42	DMPM	107
AABT	224	APXBN	163	BU	85	CRYP	190	DPATH	267
AABT1	224	AQ	92	BV	184	CS	59	DPATH1	267
AABT2	224	AQ2	92	C1	56-58	CT	164	DPIHC	278
AABT3	224	AQ2Q	44	C3	56-58	CT1	164	DSC	149
AAT	245	AQ3	92	C3X	56-58	CT1Q	48	DY	84
ABF1	148	AQ3Q	44	C4	56-58	CT2	164	E	188
ABF2	148	AQ4	92	C7	77	CT2Q	48	E1	188
ABF3	148	AQ4Q	44	CAMP	180	CT3	164	EGFR	260
ABGIC	115	AQQ	44	CBT	227	CT3Q	48	EHE1	144
ABL	112	ARP	211	CCP	212	CT5	164	ELU	224
ABOSG	222	ASA	156	CD	102	CT5Q	48	EMB	157
ABS	113	ASC	211	CD30	279	CTKN	212	EPO	88
ABT	223	ASO	208	CDF2	180	CTQ	48	ESR	140
ABT1	223	AUP	283	CDF5	181	CY	242	ESR1	140
ABT2	223	AUP1	283	CES	212	CYBK	242	ESR2	140
ABT3	223	B27	237	CESX	212	CYCGH	244	ESR3	140
ABTH	114	BALL	216	CFDNA	260	CYCMA	244	ETB	102
ABU	113	BCP	139	CGB	160	CYF	242	ETME1	229
ABVD	112	BCP2	139	CGDF	160	CYH	243	EV	60
ACA	210	BCR	149	CGE	161	CYHI	282	EXM	221
ACE	71	BCS	178	CGEX	161	CYI	242	EXM2	222
ACL	211	BCS1	179	CGL	160	CYJ	243	F	189
ADL	71	BDP	228	CGLQ	47	CYK	243	F1	189
AFD	106	BDP5	228	CGM	169	CYL	243	F3	190
AFL	148	BDPV	228	CGS1	162	CYS	74	FCAL	75
AG	71	BDPV5	228	CGS2	162	CZ	56-58	FCFS	75
AHIV	231	BFC	149	CGS3	162	CZ2X	56-58	FCN	210
AHIVW	231	BGL	245	CGS4	162	CZQ	41	FF	88
AHT	210	BGL1	245	CGS5	162	CZVM	67	FGAL	190
AL1	101	BGS	85	CGS7	162	CZX	56-58	FH1-FH10	136
AL2	101	BL	102	CH50	214	D	173	FH1P-FH10P	136
AMH	84	BMD	139	CHPVD	287	D1	175	FH3Q	45
ANA	208	BMV1	86	CHPVJ	287	D2	175	FH4Q	45
APAPCE	286	BMV2	86	CHPVK	287	D3	175	FH6Q	45
APAPCPT	285	BMV3	86	CHPVM	287	D5	176	FH9Q	45
APAPJE	286	BMV4	86	CMMP	147	D6	177	FH13	136
APAPJPT	285	BMV5	86	CMP	146	D8	178	FH13P	136
APAPKE	286	BMV6	86	CMP1	146	D9	177	FH15	137
APAPKPT	285	BNP	61	CMQ	46	DADR1	240	FL	215
APAPLE	286	BNP5	61	CMSP	246	DADR2	240	FL1	215
APAPLPT	285	BNPQ	41	CPIP	14	DAI	98	FL2	215
APAPME	286	BOR	180	CPIP1	14	DAT	224	FL3	215
APAPMPT	285	BP	193	CRO	180	DBGN	163	FL4	215
APC	210	BRAF	260	CRP	208	DEX	174	FL5	216
APOE	245	BRAFV	278	CRT	62	DFC	108	FL6	216
APS	211	BRCA	246	CRTI	62	DML	237	FLAC	181

Program Code	Pg
FLD	72
FLD2	73
FLDQ	42
FNA	290
FNA1	290
FNAG	291
FNAG1	291
FNPX	163
FOL	88
FP	87
FP1B	87
FP1T	87
FPX	87
FR	294
FR1	294
FSER	190
FSM	191
FT	75
FTC	104
G	214
G6PDS	75
GH2	63
GH5	63
GH5I	63
GHER2	281
GHQ	42
GIP	204
GIP5	204
GLI	261
GNBC	179
GOCB	150
GPBC	179
GSA	64
H	210
HBF	225
HBVL	198
HBVL5	198
HC1	181
HC2	197
HC3	181
HC4	197
HC6	186
HC6X	186
HC7	186
HCC	66
HCC2	66
HCG	208
HCV2	198
HE	136
HEP	136
HER2	281
HFC	150
HFCI	151
HG	140
HGM	247
HIVG	199
HMS	64
HPATH	145
HPATH1	145
HPS	181
HPV	197
HQBX1	277
HQBX2	277
HQBX3	277
HQBX4	277
HQIHC	274
HQIP	271
HQIPBX	276
HQISH	272
HQMEL	273
HQMMR	275
HQNEU	272
HQNSC	276
HQWSI	274
HSCRP	64
HUEP	89
HV2	199
I	132
ICSP	247
ID1	197
ID1T	197
ID2	198
ID3	198
ID5	198
IDME	202
IDN	201
IDO	201
IDPN	203
IDR	202
IFS	133
IG	208
IGHV	258
IGX	208
IL	208
IM	208
IMD1	249
IMD2	249
IMD3	249
IMW	209
IND	191
ING	86
ISH	258
ISH2	258
J	220
J1	220
JAT	221
JATE1	221
JATQ	49
JE1	220
K	82
K2	82
KET	64
KIT	260
KK	82
KRAS	260
KSA	69
KVM	90
LBAS	178
LBC	151
LCW	64
LKM	213
LN2	120
LN2BV	120
LN3	121
LN5	121-122
LN5S	121-122
LN6	122
LN7	123
LN8	123
LN9	123
LN11	124
LN12	124
LN12E	124
LN13	124-125
LN13C	124-125
LN15	125
LN16	125
LN17	125
LN18	126
LN19	126
LN20	126
LN21	126
LN22	126
LN23	127
LN24	127
LN25	127
LN27	127
LN30	128
LN31	128
LN32	128
LN33	128
LN34	129
LN35	129
LN36	129
LN37	129
LN38	130
LN39	130
LN40	130
LN41	130
LN42	131
LN43	131
LN44	131
LN45	130
LN46	131
LPE	76
LPX	183
M	74
MBT	174
MC3	176
MC4	176
ME	239
MGEN	185
MGL1	248-249
MGL2	248-249
MGL3	248-249
MGL4	248-249
MGL5	248-249
MHO	262
MHO1	262
MHO2	262
MHO3	262
MHO5	259, 262
MK	278
MMA	82
MMR	278
MPA	60
MRD	262
MRD1	262
MRD2	262
MRS	182
MRS2M	182
MRS5	182
MRS5M	182
MSI	258
MTBR	188
MTP	261
MVM	80
MVP	185
MX1B	236
MX1C	236
MX1E	236
MX2B	236
MX2C	236
MX2E	236
MXB	237
MXC	237
MYBC	279
MYG	69
N	69
NAT	232
NB	65
NB2	65
NEO	259
NGC	289
NGC1	289
NGS	254
NGSB1	255
NGSB2	255
NGSBV	257
NGSE	256
NGSHM	255
NGSST	254
NIPT	88
NOB	105
NP	284
NP1	284
NTA	102
NX	69
OCB	151
OCBQ	46
OFD	100
OLI	74
P	192
P3	192
P4	192
P5	192
P16	279
PAPCE	286
PAPCPT	285
PAPJE	286
PAPJPT	285
PAPKE	286
PAPKPT	285
PAPLE	286
PAPLPT	285
PAPME	286
PAPMPT	285
PARF	233
PCARI	65
PCARM	65

Program Code	Pg
PCARMX	65
PCNEO	217
PCP1	191
PCP2	191
PCP4	191
PCT	77
PDL1	279
PEX	193
PF	166
PF1	166
PGX	251
PGX1	251
PGX2	251
PGX3	251
PHG	76
PIA	167
PIAX	167
PIP	265
PIP1	265
PIPW	264
PIPW1	264
PLA	75
PLTM	169
PM1	279
PM2	281
PM3	279
PM5	280
PM6	280
PNA1	179
PNA2	179
PNH	217
POC1	52
POC2	52
POC3	52
POC4	52
POC6	52
POC7	52
POC8	52
POC9	52
POC10	53
POC11	53
POC12	53
POC14	54
POC15	54
POC16	54
PRO	22
PS	225
PTHQ	43
PV	156
PV1	156

Program Code	Pg
QF	213
QP201	25
QP202	26
QP203	27
QP204	28
QT1	31
QT2	31
QT3	32
QT4	32
QT5	37
QT7	33
QT8	33
QT10	34
QT15	35
QT16	36
QT17	36
QTC	22
QTP	22
R	78
RAG	223
RAP	89
RBCAT	223
RDS	213
RETT	251
RF	208
RFAV1	218
RFAV2	218
RFX	208
RHCVW	231
RMAL	193
RMC	176
RNA	260
ROM1	152
RT	141
RT2	141
RT3	141
RT3Q	45
RT4	141
RT4Q	45
RTQ	45
RUB	208
RUBX	208
RUR	183
RVBN	163
RWBC	140
S2	209
S4	209
S5	209
SALC	77
SARC	259

Program Code	Pg
SBAS	178
SC	156
SC1	156
SCDD	105
SCM1	152
SCM2	152
SCO	134
SCP	227
SCS	142
SDS	101
SE	213
SEC	250
SEC1	250
SFLC	214
SM	156
SM1CD	156
SM2CD	156
SMCD	156
SO	94
SOQ	44
SP	184
SP1	184
SPE	76
SPN	184
ST	184
STFR	80
SV	156
SW1	79
SW2	79
SW4	79
T	96
TBLA	78
THCB	106
TICP	288
TICP1	288
TM	89
TMCA	225
TMCAD	225
TMCAE	226
TMCAF	226
TMO	194
TMU	103
TMWB	103
TMX	89
TNT	62
TNT5	62
TPM	252
TRC	224
TTD	205
TVAG	186

Program Code	Pg
U	68
UAA	149
UAA1	149
UBJP	76
UDC	99
UDS	98
UDS6	98
UDSM	109
UHCG	152
UMC	153
UPBG	70
URC	149
UT	96
UTCO	134
UVM	70
V	214
VBDM	200
VBF	148
VBP	266
VBP1	266
VES	166
VF	101
VGS1	177
VGS2	177
VIP	252
VIP1	252
VITD	84
VLS	199
VLS2	199
VM1	230
VM2	230
VM3	230
VM4	230
VM5	231
VM6	231
VM6X	231
VPBS	143
VR1	196
VR2	196
VR3	205
VR3M	205
VR4	196
VRE	187
VS	185
VS1	185
VS2	186
WBCR	66
WBGQ	41
WID	194
WP3	168

Program Code	Pg
WP4	168
WP6	168
WP9	168
WP10	168
Y	84
YVM	90
YY	84
Z	56-58
ZAP70	218
ZE	60
ZT	60

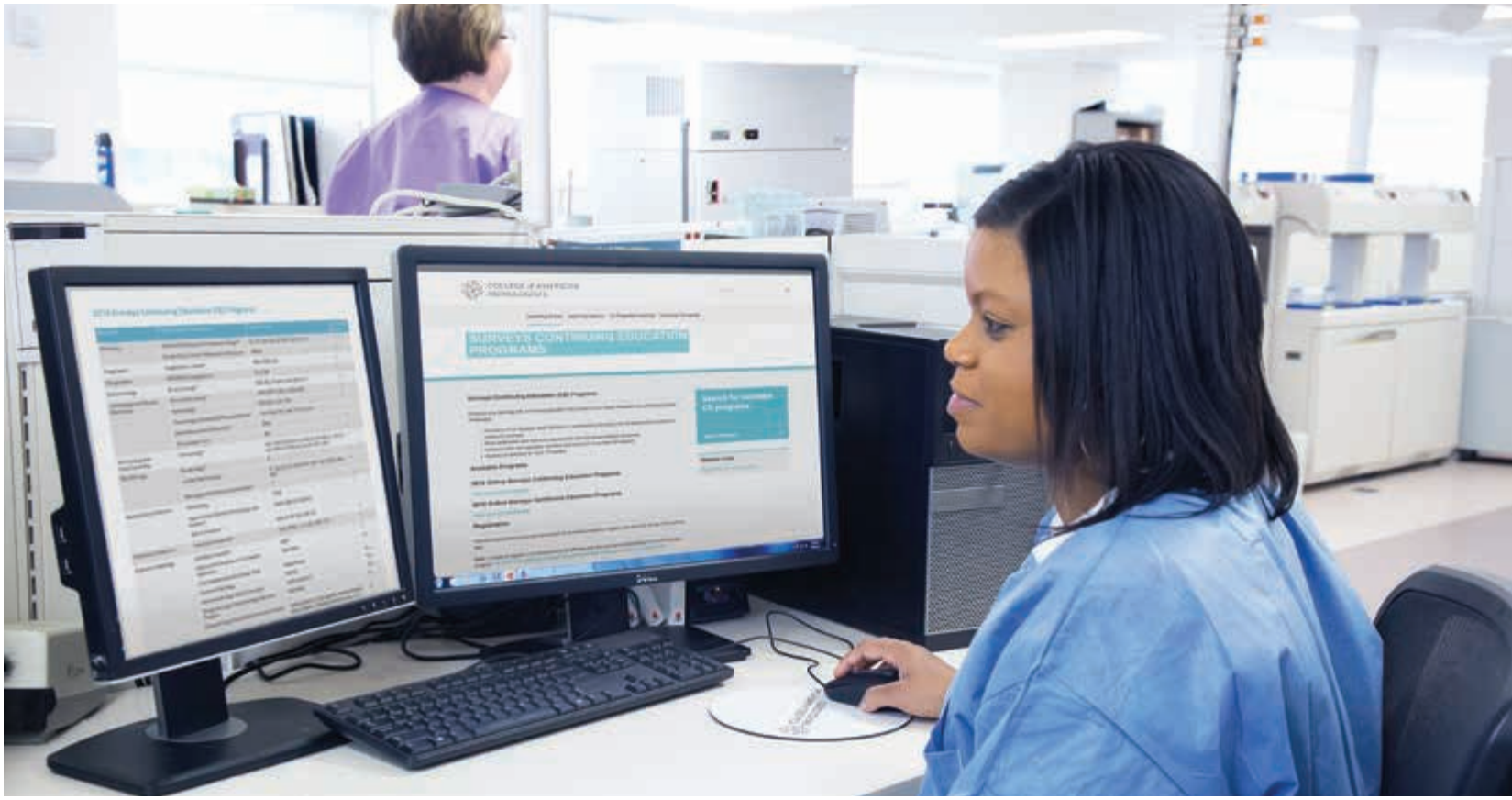
Notes

Notes

Notes

Notes

You can offer your staff more than 100 CE credits.



Enhance your learning with continuing education (CE) content that is tightly integrated with proficiency testing challenges.

- For many of our Surveys, each member of a participating laboratory has complimentary enrollment to online CE activities.
- Meet certification and licensure requirements with CE across multiple disciplines.
- Advance skills with education activities developed by more than 600 experts in pathology and laboratory medicine.
- Access CE activities for up to 12 months.

To learn more and see how to access CE, visit cap.org and search Surveys CE.

Laboratory medicine is changing at a rapid pace. Our comprehensive range of programs is constantly evolving to keep you in step with these changes, so you will have more time for what matters most—accuracy in the laboratory.

- Choose from more than 650 programs—see pages 4-6 for our full listing of new programs.
- Offer your staff up to 100 CE credits with CAP Surveys.
- Educate staff on testing trends and best practices with our Participant Summary Reports' extensive discussions.
- Purchase your programs and manage your account online—you can review, modify, and submit your prepopulated quote.

From routine to esoteric, our programs help you deliver performance you can measure and accuracy you can trust.

COLLEGE of AMERICAN PATHOLOGISTS

325 Waukegan Road
Northfield, IL 60093-2750
800-323-4040
847-832-7000 (Country code: 001)

ANAB ACCREDITED ISO/IEC 17043 PROFICIENCY TESTING PROVIDER

Printed with inks containing soy and/or vegetable oils

FSC www.fsc.org MIX Paper from responsible sources FSC® C132124

cap.org