2013

Quality Management Tools
“Our goal is to improve laboratory quality. We strive to address current laboratory issues by measuring the best and most relevant quality indicators and identifying the best associated practices.”

– Raouf E. Nakhleh, MD, FCAP
Chair, CAP Quality Practices Committee
Quality Management Tools

The CAP’s comprehensive collection of Quality Management Tools (QMT) strengthens your knowledge of key laboratory processes, identifies quality improvement opportunities, and provides the information you need for effective laboratory management:

- **Q-PROBES™** In-Depth Quality Assessment Program
- **Q-TRACKS®** Continuous Quality Monitoring Program
- **Q-MONITORS™** Customized Quality Monitors Program
- **LMIP®** Laboratory Management Index Program
- **CAP LINKS™** The Laboratory Integrated Knowledge Source

The CAP’s Quality Management Tools help you:

- **Identify** quality improvement opportunities and monitor progress over time
- **Establish** realistic goals for your laboratory using a set of customized external benchmarks
- **Demonstrate** the ability to meet accreditation requirements

Integrate QMT into your daily activities to support your quality improvement initiatives!

Q-PROBES, Q-TRACKS, and Q-MONITORS activities meet the American Board of Pathology MOC Part IV Practice Performance Assessment requirements.
Q-PROBES, Q-TRACKS, and Q-MONITORS offer a comprehensive collection of tools to complement your quality management program needs.*

<table>
<thead>
<tr>
<th>Q-PROBES</th>
<th>Preanalytic</th>
<th>Analytic</th>
<th>Postanalytic</th>
<th>Anatomic Pathology</th>
<th>Clinical Pathology</th>
<th>Turnaround Time</th>
<th>Patient Safety</th>
<th>Microbiology</th>
<th>Transfusion Medicine</th>
<th>Chemistry/Hematology</th>
<th>Customer Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reasons for Test Cancellation (QP131)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Point-of-Care Glucose Critical Values (QP132)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microbiology Testing for Hospital Infection Control (QP133)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Molecular Testing in Anatomic Pathology (QP134)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q-TRACKS</td>
<td>Preanalytic</td>
<td>Analytic</td>
<td>Postanalytic</td>
<td>Anatomic Pathology</td>
<td>Clinical Pathology</td>
<td>Turnaround Time</td>
<td>Patient Safety</td>
<td>Microbiology</td>
<td>Transfusion Medicine</td>
<td>Chemistry/Hematology</td>
<td>Customer Satisfaction</td>
</tr>
<tr>
<td>Patient Identification Accuracy (QT1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood Culture Contamination (QT2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laboratory Specimen Acceptability (QT3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-Date Blood Product Wastage (QT4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gynecologic Cytology Outcomes: Biopsy Correlation Performance (QT5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction With Outpatient Specimen Collection (QT7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stat Test Turnaround Time Outliers (QT8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical Values Reporting (QT10)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turnaround Time of Troponin (QT15)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Results (QT16)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outpatient Order Entry Errors (QT17)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*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, 20316). The Joint Commission requires accredited hospitals to regularly collect and analyze performance data (PI.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).
Select Q-PROBES, Q-TRACKS, and Q-MONITORS activities to support your quality improvement initiatives.

<table>
<thead>
<tr>
<th>Q-MONITORS</th>
<th>Preanalytic</th>
<th>Analytic</th>
<th>Postanalytic</th>
<th>Anatomic Pathology</th>
<th>Clinical Pathology</th>
<th>Turnaround Time</th>
<th>Patient Safety</th>
<th>Microbiology</th>
<th>Transfusion Medicine</th>
<th>Chemistry/Hematology</th>
<th>Customer Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring of Troponin Metrics for Chest Pain Centers (QM1)</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Completeness of Cancer Reporting (QM2)</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
</tbody>
</table>

*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, 20316). 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).

We’re here to assist!

Our highly trained Customer Contact Center team is available to take your calls Monday through Friday from 7:00 AM to 5:30 PM CT. This group is dedicated to provide a full range of support services, including:

- Place or modify orders
- Change contact information
- Discuss special needs
- Initiate CAPTRAKer℠ emails

If we can be of assistance, please contact us at 800-323-4040 or 847-832-7000 option 1 or email us at contactcenter@cap.org.
A Program for In-depth Comprehensive Assessment

Evaluate quality improvements in your laboratory—With today’s focus on reducing medical errors, laboratories strive to achieve and maintain excellence. Using short-term studies, Q-PROBES provides a one-time comprehensive assessment of key processes in your laboratory.

Structure your data collection and analysis for success—Use Q-PROBES to help build and improve data collection and analysis processes that contribute to quality of care, patient safety, and outcomes.

Establish realistic laboratory benchmarks and performance goals—Implement Q-PROBES, an external peer-comparison program, to address process-, outcome-, and structure-oriented quality assurance issues. Establish benchmarks through external database comparisons and compare your performance to that of peer organizations to establish laboratory goals and improve performance.

Q-PROBES activities meet the American Board of Pathology MOC Part IV Practice Performance Assessment requirements.

Examine the effectiveness of key processes with Q-PROBES.
Laboratory tests may be cancelled for a variety of reasons after specimens have been collected and received in the laboratory but before results have been reported. Each cancellation represents both a use of laboratory resources and a potential delay in patient care. Preanalytical reasons for test cancellation by the ordering source include wrong test, wrong patient, or duplicate tests. The laboratory may also cancel tests for preanalytical reasons related to specimen quality, transportation conditions, or lost specimens. Analytical reasons for test cancellation by the laboratory include such things as interfering substances or contamination that make results unreliable.

This study will allow participant laboratories to categorize the reasons for test cancellation in order to identify opportunities for improvement in test ordering, quality of collected specimens, and specimen tracking.

**Objective**

Determine the rate and reasons for test cancellation for blood specimens that have been collected and received in the laboratory for hematology, chemistry, or coagulation testing and compare performance between participating institutions.

**Data Collection**

Participants will prospectively review accessions into the chemistry/hematology/coagulation laboratories for a six-week period or until 75 cancellation events are identified. An event may be a single test cancelled or if multiple tests are cancelled at the same time for the same reason, this will be considered one cancellation event. The participants will provide the reason for the cancellation (e.g., cancelled by ordering source, cancelled by laboratory for ordering problems, specimen quality, or analytical problems).

**Performance Indicator**

- Overall rate of cancelled tests

**Performance Breakdown**

- Breakdown of reasons for test cancellation
- Breakdown of cancelled tests by testing section

This is a one-time study conducted in the first quarter.
Objective
Determine the current policies and practices involving verification and notification of critical value results obtained by POCG measurements in the hospital and emergency department setting.

Data Collection
Participants will retrospectively identify 50 consecutive POCG measurements (or all that are identified within a review limit of one year) on inpatients and emergency department patients that initially (before confirmation) produced critical high or critical low results. For each case, record the method, result, and location. Also, if performed, record the confirmation method, confirmation result, and notification action. Record the total number of POCG tests and the total number of critical values from the time period used to identify the 50 critical glucose measurements.

Complete a questionnaire of policies and practices related to critical POCG results. Information to be collected will include POCG methods, operator training and certification, definition of POCG critical values, procedure and criteria for confirming a POCG critical value, and process for notification, including documentation. In addition, information will be collected about quality assurance tracking of critical POCG values.

Performance Indicators
- Primary:
  - Rate of critical value results with additional confirmatory testing
- Secondary:
  - Percentage of POCG measurements in the critical range (high or low)
  - Breakdown by testing location

This is a one-time study conducted in the second quarter.
**Microbiology Testing for Hospital Infection Control  QP133**

Clinical microbiology reports are the pivot on which hospital infection control turns. The Joint Commission requires all accredited hospitals to maintain epidemiological monitoring programs. The Centers for Medicare & Medicaid Services (CMS) mandates that all hospitals submit data on measures to prevent health care-associated infections and withhold reimbursement when patients are readmitted with some of them.

Quality measures for methods to detect antimicrobial resistant agents of hospital-acquired infections are in flux. Infection control measures that respond to agents’ isolation are controversial. This Q-PROBES study examines detection rates for the two most clinically important of these agents in settings of surveillance and diagnosis.

**Objective**
Examine detection rates in the surveillance and diagnosis of various methods for demonstrating (1) methicillin-resistant *Staphylococcus aureus* (MRSA) and (2) *Clostridium difficile*.

**Data Collection**
Identify methicillin-resistant *S. aureus* and *C. difficile* positive specimens until 30 isolates of each phenotype are identified or eight weeks have elapsed, whichever comes first. Record the collection site (MRSA) or type of stool specimen (*C. difficile*), specimen collection date/time, result reporting date/time, and the detection method for the MRSA or *C. difficile* positive specimen. In addition, record the number of patients admitted to the hospital, the number of *S. aureus* isolates (both methicillin-sensitive and methicillin-resistant), and the number of samples submitted for *C. difficile* testing during the study period.

Participants will return two questionnaires. In the first questionnaire, laboratory personnel characterize specimen collection requirements, detection methods, and reporting practices for the two agents of interest. In the second questionnaire, local infection control practitioners report on institutional practices regarding screening for methicillin-resistant *S. aureus* and *C. difficile* and regarding isolation of patients carrying or infected by these phenotypes.

**Performance Indicators**
- **Primary:**
  - Separate detection rates for MRSA and *C. difficile*:
    - Among patients presenting for admission to hospital
    - Among patients contracting these agents as nosocomial infections
- **Secondary:**
  - Breakdown by body site for the organisms isolated by various microbiological techniques
  - Median and range of time interval between specimen collection and result reporting stratified by detection method

This is a one-time study conducted in the third quarter.
With the rapid growth of specialized molecular testing, laboratories are being asked more frequently to use anatomic pathology material to perform molecular testing, either in the laboratory or as a send-out to a reference laboratory. The retrieval and preparation of the material may be very time consuming and labor intensive, particularly if unstained slides are requested or archival storage is not on site. In some cases, laboratories are required to perform molecular tests on a reflex basis. The molecular tests themselves can be very costly. When the requested testing does not meet established clinical guidelines in regard to the timing of the test, the use of the results, or the adequacy of the material available for testing, the laboratory may question the relevance of these assays. While there are some guidelines on clinical relevance and performance of these tests, there is currently limited information in the literature about the adherence to these guidelines and the additional workload on laboratory personnel.

**Objective**
Determine timing, appropriateness, and practice patterns of molecular testing in surgical pathology for lung carcinoma, colorectal carcinoma, and melanoma.

**Data Collection**
Two data collections will be conducted. First, participants will retrospectively identify all lung carcinoma, colorectal carcinoma, and melanoma cases for which molecular testing was performed over the prior year, or until 40 cases are collected, whichever comes first. For each case, participants will record the patient’s demographic information, the organ site, specimen type (ie, biopsy, resection, cytology), histologic subtype of the tumor, tissue preparation that was used for molecular analysis (ie, paraffin block, unstained slides), molecular test requested, the order or submit date, and the final report date for the molecular test result. Second, participants will prospectively collect information on all requests for molecular testing in anatomic pathology over a one month period, or until 30 cases are collected, whichever comes first. For each collection, both in-house and send-out tests will be included.

**Performance Indicators**
- **Primary:**
  - Percentage of cases in which the use of molecular testing adhered to established clinical guidelines
- **Secondary:**
  - Percentage of cases in which molecular testing was successfully performed
  - Percentage of all solid tumor cases for which molecular testing was requested
  - Turnaround time parameters

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

A Program of Continuous Quality Monitoring

Observe performance trends over time to identify and monitor opportunities for quality improvement through quantitative quality measures. Q-TRACKS offers continuous quality monitoring with longitudinal tracking of performance and key indicators for clinical and anatomic pathology.

Step 1:
Establish realistic benchmarks by comparing your laboratory to others like yours.

Step 2:
Identify improvement opportunities.

Step 3:
Monitor improvement over time to ensure accurate diagnosis, patient safety, and quality patient care.

Q-TRACKS activities meet the American Board of Pathology MOC Part IV Practice Performance Assessment requirements.
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: “Improve the accuracy of patient identification,” 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.

**Objective**
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 error. 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 this requirement.

**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) *Streptococci*; *Propionibacterium acnes*; *Corynebacterium* sp. (diptheroids); or *Bacillus* sp. Participants have the option to monitor institution-specific subgroups.

**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.

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

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

Performance Indicator
• Specimen rejection rate (%)

Performance Breakdown
• Breakdown of reasons for rejection (%)

In-Date Blood Product Wastage  QT4

Blood for transfusion is a precious resource. At a minimum, wastage of blood that is not out-of-date represents a financial loss to the health care system. More ominously, systemic wastage of blood may reflect an environment of care that is out of control and could pose risks to patient safety.

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. Include the following types of blood components: red blood cells (allogeneic), frozen plasma, platelet concentrates, single donor platelets, and cryoprecipitate.

Performance Indicators
• Overall blood wastage rate (%)
• Wastage rates by blood component type (%)

Performance Breakdown
• Breakdown of circumstances of wastage (%)

Look for your input forms approximately three weeks prior to the quarter.
Satisfaction With Outpatient Specimen Collection  

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. Accrediting agencies such as The Joint Commission and CAP (GEN.20335) require measurement of patient satisfaction with laboratory services. Use this monitor to help meet this requirement.

**Objective**
Assess patient satisfaction with outpatient phlebotomy services by measuring patients’ assessment of waiting time, discomfort level, courteous treatment, and overall satisfaction.

**Data Collection**
On a monthly basis, participants will distribute copies of a questionnaire 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**
- Overall patient satisfaction score
- Patients “more than satisfied” (%)

---

Stat Test Turnaround Time Outliers  

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 Checklist requirement GEN.20316, “The QM program includes monitoring key indicators of quality in the preanalytic, analytic, and postanalytic phases.

**Objective**
Monitor the frequency with which 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 determinations 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. Recent regulations from agencies and accreditors such as the CMS, The Joint Commission, and the CAP (GEN.20316, COM.30000) 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 of general chemistry, hematology, and coagulation analytes for both inpatients and outpatients according to the laboratory’s policy.

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. This monitor will exclude critical values for microbiology, cardiac markers, drugs of abuse, therapeutic drug levels, urinalysis, blood gases, point-of-care tests, tests performed at reference laboratories, and critical values on discharged patients.

Performance Indicators
- Total critical values reporting rate (%)
- Inpatient critical values reporting rate (%)
- Outpatient critical values reporting rate (%)

Turnaround Time of Troponin  QT15

The swiftness with which physicians establish diagnoses of acute myocardial infarction (AMI) in patients presenting to the emergency department (ED) with chest pain may determine the type and predict the outcome of therapy those patients will receive. Included in the total time consumed in establishing diagnoses of AMI are the component intervals required to measure biochemical markers of myocardial injury. One of the most critical biochemical markers is troponin. Help meet CAP Checklist requirement GEN.20316 with this monitor.

Objective
Determine the median order-to-report turnaround time (TAT) of troponin (I or T) and the percent of troponin results reported by each institution’s established deadline.

Data Collection
Participants will record TATs (in minutes) for three randomly selected troponin specimens obtained from patients seen in EDs on each of three traditional shifts (total of nine measurements) on six predetermined days per month. They will measure TATs from the time the tests are ordered to the time that results are made available to ED personnel.

Performance Indicators
- Median troponin order-to-report TAT (minutes)
- Troponin TAT compliance rate (%)
**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, 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, potentially extending a patient’s hospital stay and prolonging 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.

**Objective**

Measure the incidence of incorrectly interpreted and entered outpatient physician test orders into the laboratory computer, 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. Order entry error categories include requesting physician errors; incorrect, missing, and extra test errors; test priority errors; and nonroutine routing request errors. This monitor excludes tests performed in transfusion medicine/blood bank or anatomic pathology. This monitor also excludes tests from the following patient care settings: inpatient, ED, ambulatory surgery, urgent care, chest pain center, 23-hour short-stay facility, employee health department, outpatient screening fair/promotion, and dialysis center.

**Performance Indicators**

- 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.
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 potential problems that require improvement, thereby ensuring better patient results.

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

Data Collection
On a monthly basis, participants will record information on 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 patients for whom a cervical biopsy specimen is submitted to the laboratory and for whom a satisfactory or satisfactory but limited Pap test has been submitted within three months previous to the biopsy or at the time 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.
Q-MONITORS

A Program for a Customized Comprehensive Assessment

Evaluate quality improvements in your laboratory
With today’s focus on reducing medical errors, achieving and maintaining excellence is key to success. Using continuous monitoring, Q-MONITORS provide a comprehensive assessment of key processes in your institution and allow your institution to meet accreditation and regulatory requirements.

Structure your data collection and analysis for success
Use Q-MONITORS to help build and improve data collection and analysis processes that contribute to quality of care, patient safety, and outcomes. Observe performance trends over time to identify and monitor opportunities for quality improvement through quantitative quality measures.

Establish realistic laboratory benchmarks and performance goals
Q-MONITORS are customized programs that address process-, outcome-, and structure-oriented quality assurance issues. Establish benchmarks through external database comparisons and compare your performance to establish goals for performance improvement.
Q-MONITORS Customized Quality Monitoring Program

Monitoring of Troponin Metrics for Chest Pain Centers  QM1

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. Chest pain centers should therefore have effective procedures for ensuring optimal turnaround time (TAT) for troponin and a process for ongoing monitoring to ensure that performance meets expectations. Participants will monitor two to eight metrics required by the Society of Chest Pain Centers (Cycle IV: Key Element 4.4.0.0) and monitor the CMS requirement (Measure OP-16) for troponin turnaround time of 60 minutes or less when measured from patient arrival to result availability.

Institutions do not need to be accredited by the Society of Chest Pain Centers to participate in this monitor.

Objective
Help meet the CMS and Society of Chest Pain Centers (SCPC) quality performance requirements for monitoring ED troponin TAT and meeting timeliness goals.

Data collection
Collect data six days per month from nine patients per day from patients in whom troponin is measured and record time points for certain actions in the testing process. These times include patient arrival, test order, specimen collection, laboratory receipt, and result availability. Participants will select which metrics to monitor, with the option to monitor all metrics.

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

SCPC Metrics
Main Laboratory Troponin Testing
at least one of the following:
• Patient arrival to result availability
• Specimen collection to result availability
• Test order to result availability
and at least one of the following:
• Patient arrival to test order
• Test order to specimen collection
• Specimen collection to laboratory receipt
• Laboratory receipt to result availability

Point-of-Care Troponin Testing
• Specimen collection to result availability (required)
• Patient arrival to result availability (optional)

Performance indicators
• Median TAT for troponin testing intervals (monthly)
• Test order to result availability compliance rate (if applicable)
• Specimen collection to result availability compliance rate (if applicable)

Reports
Participants will receive benchmarking, as compared to all institutions, for specimen collection to result availability turnaround time.

A report will be provided on a quarterly basis for compliance with Chest Pain Center key element 4.4.0.0; ED Baseline Troponin Turn-Around-Time Metrics.
Completeness of Cancer Reporting  QM2

In 2004, the American College of Surgeons Commission on Cancer introduced Standard 4.6 (now Standard 2.1) for accredited Cancer Centers pertaining to pathology reports. The Commission required that at least 90% of cancer resection reports contain all of the required data elements defined by the CAP Cancer Protocols. The CAP Laboratory Accreditation Program contains a similar requirement (ANP.12350).

The Joint Commission standards for medical staff MS.4.15 and MS.4.40 stipulate that medical staff members undergo Ongoing Professional Practice Evaluation (OPPE) more often than every year, and completeness of cancer reporting has been suggested as one measure suitable for OPPE. Finally, the CMS pay-for-performance standards for pathologists provided incentives for the inclusion of specific elements in colon, breast, and prostate cancer reports (H.R. 6111).

This ongoing quality performance measure can be used to assess whether departments are in compliance with standards related to cancer reporting. The data may also be subcategorized by individual pathologist for use in ongoing professional practice evaluations.

Objective
Determine the adequacy of cancer reporting.

Data Collection
To achieve the Commission on Cancer Center designation, the lesser of 75 cases or 10% of cancer reports must be reviewed each quarter for adequacy. For other laboratories, a minimum of 30 cases per quarter is required for evaluation. Institutions may optionally collect data for individual pathologists to be used for ongoing professional practice evaluations. Reports will be evaluated for the presence of all CAP-required data elements, as specified in the CAP Cancer Checklists, and the use of synoptic format.

Performance Indicators
- **Primary:**
  - Percentage of reports that include all CAP-required data elements
  - Percentage of reports using a synoptic format
- **Secondary:** (optional)
  - Summary of each pathologist’s performance with respect to completeness and use of synoptic format
Manage your laboratory more effectively with LMIP—The Laboratory Management Index Program (LMIP), an effective fiscal management tool, offers a valuable peer comparison of your laboratory’s performance. LMIP can help you with the annual budget process, contract negotiations, and daily operations management.

With more than 15 years of experience and the largest laboratory participant database, LMIP is the best management resource for health care professionals charged with decision-making responsibilities. Using management ratios as performance indicators, LMIP extends beyond traditional analysis of productivity and staffing to focus on the most important factors affecting laboratory performance:

- **Productivity**—How effectively are you using your laboratory personnel?
- **Utilization**—How do your test-ordering patterns compare to those of your peers?
- **Cost-effectiveness**—How efficiently are you using your supplies, equipment, and labor?

With LMIP’s statistically valid method of peer grouping (fingerprint clustering), you receive the most meaningful comparisons. These comparisons allow you, your colleagues, and your administration to make informed and realistic decisions about staffing, budgets, and other performance targets.

Achieving quality test results involves more than just ensuring properly conducted tests. Understanding financial factors that drive laboratory processes enhances your confidence in the management decisions you make. Ultimately, these decisions will guide your organization to deliver superior patient care.
**Laboratory Management Index Program  LMB**

LMIP provides a report of your laboratory’s overall operation. Quarterly reports summarize relevant management ratios that provide analysis of the productivity of personnel, laboratory policies and procedures, salary and other expenses, physician test utilization, and organizational benefits.

The input items you will collect include:

- Blood Expense
- Consumable Expense
- Equipment Depreciation Expense
- Equipment Maintenance and Repair Expense
- Hospital Inpatient Days
- Hospital Inpatient Discharges
- Inpatient SBTs
- Nonpatient SBTs
- On-Site SBTs
- Outpatient SBTs
- Outpatient Visits
- Referred SBTs
- Referred SBT Expense
- Testing Labor Expense
- Testing Paid Hours
- Total Labor Expense
- Total Laboratory Paid Hours
- Total Laboratory Worked Hours
- Total SBTs

LMIP uses the Standardized Billable Test (SBT) as the primary unit of measure. The SBT standardizes test counts and eliminates billing, accounting, and interpretation variations to ensure valid comparisons.
CAP LINKS

The Integrated Knowledge Source

Consolidate proficiency testing, accreditation, and quality improvement data for your entire organization into concise and actionable reports.

The CAP designed CAP LINKS for multihospital systems, academic medical centers with numerous testing locations, and national commercial reference laboratories. CAP LINKS provides a high-level overview useful in identifying improvement opportunities and demonstrating good QI performance. You can access CAP LINKS data directly from the CAP laboratory improvement database. Therefore, the CAP does not require additional data submission. Use CAP LINKS for your CAP laboratory improvement programs, including:

- Surveys and Anatomic Pathology Education Programs and EXCEL®
- Laboratory Accreditation Program
- LMIP—Laboratory Management Index Program

The enhanced CAP LINKS provides you the ability to do the following:

- Download data and manipulate reports to accommodate your specific institution’s needs
- Use email to forward one or all reports to appropriate individuals for viewing
- Designate viewing options to select individuals directly via the CAP website
- Receive CAP LINKS reports promptly via the Web—the CAP will continue to forward your printed reports via regular mail
- Respond to exceptions in a more timely manner

The report package allows you to quickly see good performance and identify sites that may require special attention, both at the laboratory level and at the system or corporate level.

The CAP generates reports on a quarterly basis and distributes them via the Internet and by mail to an individual whom you designate as your system’s primary contact. Annually, your primary contact will receive an overview of the system’s full-year performance for proficiency testing. Those individuals with granted viewing privileges may view these secure online reports.
Quarterly reports summarize PT systemwide average results by discipline to allow for interlaboratory comparisons.

Accreditation reports recap inspection findings for each laboratory.
## Quality Management Tools Pricing Overview

### 2013 Q-PROBES

<table>
<thead>
<tr>
<th>Modules/Packages</th>
<th>Product Codes</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual QP Studies</td>
<td>QP131, QP132, QP133, QP134</td>
<td>$420 each</td>
</tr>
<tr>
<td>All Four QP Studies</td>
<td>PRO</td>
<td>$1,514</td>
</tr>
</tbody>
</table>

### 2013 Q-TRACKS

<table>
<thead>
<tr>
<th>Modules/Packages</th>
<th>Product Codes</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Clinical Pathology (CP) Monitors</td>
<td>QT1, QT2, QT3, QT4, QT7, QT8, QT10, QT15, QT16, QT17</td>
<td>$940 each</td>
</tr>
<tr>
<td>Individual Anatomic Pathology (AP) Monitors</td>
<td>QT5</td>
<td>$940 each</td>
</tr>
<tr>
<td>Combined CP/AP Module – Includes all 11 QT Monitors</td>
<td>QTP</td>
<td>$9,304</td>
</tr>
<tr>
<td>Clinical Pathology Module – Includes all 10 CP Monitors</td>
<td>QTC</td>
<td>$8,460</td>
</tr>
</tbody>
</table>

### 2013 Q-MONITORS

<table>
<thead>
<tr>
<th>Module</th>
<th>Product Codes</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual QM Studies</td>
<td>QM1, QM2</td>
<td>$780 each</td>
</tr>
</tbody>
</table>

### 2013 Laboratory Management Index Program

<table>
<thead>
<tr>
<th>Module</th>
<th>Product Code</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>LMIP</td>
<td>LMB</td>
<td>$840</td>
</tr>
</tbody>
</table>

### 2013 CAP LINKS

<table>
<thead>
<tr>
<th>Combination Program Options</th>
<th>Product Codes</th>
<th>Surveys/EXCEL</th>
<th>LAP</th>
<th>LMIP</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 1</td>
<td>IMR1</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>$2,800</td>
</tr>
<tr>
<td>Option 2</td>
<td>IMR2</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td>$2,000</td>
</tr>
<tr>
<td>Option 3</td>
<td>IMR3</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td>$2,200</td>
</tr>
<tr>
<td>Option 4</td>
<td>IMR4</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td>$1,500</td>
</tr>
<tr>
<td>Individual Program Options</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surveys/EXCEL</td>
<td>IMRPT</td>
<td>Yes</td>
<td></td>
<td></td>
<td>$1,500</td>
</tr>
<tr>
<td>Laboratory Accreditation Program</td>
<td>IMRLP</td>
<td>Yes</td>
<td></td>
<td></td>
<td>$800</td>
</tr>
<tr>
<td>LMIP</td>
<td>IMRLM</td>
<td>Yes</td>
<td></td>
<td></td>
<td>$500</td>
</tr>
</tbody>
</table>
Quality Management in Anatomic Pathology:
Promoting Patient Safety Through Systems Improvement and Error Reduction
Raouf E. Nakhleh, MD, FCAP, and Patrick L. Fitzgibbons, MD, FCAP, editors

Quality Management in Anatomic Pathology is the only comprehensive manual designed to improve patient care while ensuring your laboratory achieves its accreditation standards. The manual provides pathologists and laboratory directors with the tools necessary to develop, implement, and maintain a comprehensive quality improvement program.

It emphasizes regulatory compliance, with cross-references to the CAP Laboratory Accreditation Program checklist items and CLIA regulations.

Quality Management in Anatomic Pathology contains comprehensive coverage of all segments of the anatomic pathology test cycle (preanalytic, analytic, and postanalytic), detailed benchmark data with extensive references, and information on diagnostic discrepancies and suggested actions. Helpful examples of forms to document quality assurance activity as well as a comprehensive glossary also are included.

Contents include:
- Designing a quality improvement plan
- Regulatory compliance
- Strategies for error reduction and prevention in surgical pathology
- Defining and handling errors
- Quality improvement plan components and monitors
- Quality management in histology, immunohistochemistry, cytology, and autopsy pathology

Item number: PUB118
ISBN number: 0-930304-86-1
Softcover; 198 pages; 77 tables, figures, exhibits, and checklists; 2005
Price: $95
Member price: $65

Quality Management in Clinical Laboratories:
Promoting Patient Safety Through Risk Reduction and Continuous Improvement
Paul N. Valenstein, MD, FCAP, editor

A practical how-to manual written for the laboratory director, supervisor, and practicing pathologist, Quality Management in Clinical Laboratories covers the most important standards and areas that have proven to be particularly problematic in the management of clinical laboratories. Patient safety issues—an essential and inseparable component of laboratory quality—are discussed throughout the text.

Sponsored by the College of American Pathologists Quality Practices Committee and Patient Safety and Performance Measures Committee, the manual is designed to help readers manage quality and patient safety in clinical laboratories; comply with quality and patient safety regulations and accreditation requirements; and develop and administer a quality management plan.

Contents include:
- Case studies based on knowledge of actual events
- Approaches to managing quality and patient safety
- Regulation and accreditation
- Specific quality and patient safety risks and control measures for preanalytic, analytic, postanalytic, and general laboratory operations
- The laboratory quality management plan, with sample plans
- Extensive glossary and up-to-date references

Item number: PUB214
ISBN number: 0-930304-88-8
Softcover; 265 pages; 89 exhibits and figures; 2005
Price: $95
Member price: $65
Programs and Resources

Accreditation for Biorepositories
Accreditation for Laboratories
Advocacy
CAP 15189SM
Learning

Membership
Proficiency Testing
Quality Management Tools
STS Professional Services

2013

Quality Management Tools

© 2012 College of American Pathologists. All rights reserved.