



**NPQR**  
NATIONAL PATHOLOGY QUALITY REGISTRY

# NPQR Performance Measures

- **APPROPRIATE USE OF LABORATORY TESTING**
- **IMPROVING PRE-ANALYTICAL PROCESSES**
- **OPTIMIZING TURNAROUND TIME AND CRITICAL VALUE REPORTING**
- **ASSESSING DIAGNOSTIC ACCURACY**

## MEASURE ID: NPQRAU1

**MEASURE TITLE:** Notification to the Ordering Provider Requesting 25-OH-Vitamin D Testing

**MEASURE DESCRIPTION:** Percentage of ordering providers who ordered a 25-OH-Vitamin D, who were informed by the laboratory this test is not beneficial for patients who do not have suspected osteoporosis, chronic kidney disease, malabsorption or obesity

**INSTRUCTIONS:** This measure is to be reported each time a patient has a 25-OH-Vitamin D test performed

**DENOMINATOR:** All providers who have ordered a 25-OH-Vitamin D deficiency laboratory test for any adult patients (18 years and older)

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:** Non-chemistry pathology blood tests, non-blood tests, point of care testing. The following: osteoporosis, chronic kidney disease, malabsorption, obese individuals

**NUMERATOR:** The number of providers who have ordered a 25-OH-Vitamin D deficiency laboratory test that were notified by the laboratory these tests are not beneficial for patients without osteoporosis, chronic kidney disease, malabsorption or obesity

## OR FOLLOW PRACTICE PATTERNS WITHOUT THE NEED FOR CLINICIAN NOTIFICATION WITH:

**MEASURE TITLE:** Don't Order Population Based Screening For 25-OH-Vitamin Deficiency

**MEASURE DESCRIPTION:** Percentage of patients who have a 25-OH-Vitamin D performed

**INSTRUCTIONS:** This measure is to be reported each time a patient has a 25-OH-Vitamin D test performed.

**DENOMINATOR:** All adult patients who have had a laboratory test performed

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:** Non-chemistry pathology blood tests, non-blood tests, Point of care testing

**NUMERATOR:** All patients who have had a 25-OH-Vitamin D deficiency laboratory test (CPT – 82306, 82307) performed

**RATIONALE:** Vitamin D deficiency is common in many populations, particularly in patients at higher latitudes, during winter months and in those with limited sun exposure. Over the counter Vitamin D supplements and increased summer sun exposure are sufficient for most otherwise healthy patients. Laboratory testing is appropriate in higher risk patients when results will be used to institute more aggressive therapy (e.g., osteoporosis, chronic kidney disease, malabsorption, some infections, obese individuals).

**MEASURE TYPE:** Process

**NQS DOMAIN:** Effective Clinical Care

## MEASURE ID: NPQRAU2

**MEASURE TITLE:** Test for Troponin I or T in the Diagnosis of Acute Myocardial Infarction (AMI). Don't Use Myoglobin or CK-MB

**MEASURE DESCRIPTION:** Percentage of patients who have a diagnosis of AMI, that have a troponin I or T test performed

**INSTRUCTIONS:** This measure is to be reported each time a patient who is suspected to have an AMI requires a lab test performed for cardiac markers.

**DENOMINATOR:** All adult patients (18 years and older) who have a diagnosis of acute myocardial infarction and have a CK-MB or myoglobin or troponin I or T laboratory test performed

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:** Trauma, myositis, myopathy

**NUMERATOR:** All adult (18 years and older) patients who have a diagnosis of acute myocardial infarction and have a troponin I or T laboratory test performed

**RATIONALE:** The American College of Cardiology/ American Heart Association (ACC/AHA) and the European Society of Cardiology (ESC) guidelines recommend that cardiac biomarkers should be measured at presentation in patients with suspected AMI. Unlike CK-MB and myoglobin, the release of troponins I and T are specific to cardiac injury. Troponin is released before CK-MB and appears in the blood as early as, if not earlier than, myoglobin after AMI. Single-point troponin measurements equate to infarct size for the determination of the AMI severity. Accordingly, there is much support for relying solely on troponin and discontinuing the use of CK-MB and other markers. Troponins are components of cardiac muscle that are released into the blood when myocardial cells are injured. They are very specific for myocardial muscle – even more specific than CK-MB. Troponins rise within 3-12 hours after the onset of MI (though the rise is more gradual than the steep bump you see with CK-MB). They remain elevated for a long time (5-9 days for troponin I and up to a couple weeks for troponin T)

**MEASURE TYPE:** Process

**NQS DOMAIN:** Effective Clinical Care

## MEASURE ID: NPQRAU3

**MEASURE TITLE:** In the Initial Screening of a Patient with a Suspected Thyroid Disorder Perform only a Thyroid Stimulating Hormone (TSH) Test, and if Abnormal, Follow up with Additional Evaluation Depending on Findings

**MEASURE DESCRIPTION:** Percentage of patients who have only a Thyroid Stimulating Hormone (TSH) performed in the evaluation of non-neoplastic thyroid disease

**INSTRUCTIONS:** This measure is to be reported each time a patient has a thyroid laboratory test performed.

**DENOMINATOR:** All adult patients (18 years and older) with a thyroid laboratory test performed

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:** Any patient with a diagnosis of head and/or neck trauma, or neoplastic thyroid disease. Any patient who had a previous TSH that was abnormal

**NUMERATOR:** All adult patients (18 years and older) who have a TSH performed

**RATIONALE:** The analysis of thyroid hormones and antibodies together may improve the accuracy of diagnosis of thyroid disorders and treatment success. The analysis of thyroid stimulating hormone (TSH), free thyroid hormones and thyroid antibodies may best distinguish thyrotoxicosis from hypothyroidism and the euthyroid state. Measurement of serum TSH is the primary screening test for thyroid dysfunction, for evaluation of thyroid hormone replacement in patients with primary hypothyroidism, and for assessment of suppressive therapy in patients with some thyroid cancers. The TSH test can detect subclinical thyroid disease in patients without symptoms of thyroid dysfunction. A TSH value within the reference interval excludes the majority of cases of primary overt thyroid disease. If the TSH is abnormal, confirm the diagnosis with free thyroxine (T4).

**MEASURE TYPE:** Process

**NQS DOMAIN:** Community, Population and Public Health; Effective Clinical Care

## MEASURE ID: NPQRAU4

**MEASURE TITLE:** In Cases of Suspected Acute Pancreatitis Test for Lipase. Do Not Test for Amylase

**MEASURE DESCRIPTION:** Percentage of patients who have lipase testing performed when suspecting acute pancreatitis

**INSTRUCTIONS:** This measure is to be reported each time a patient with suspected acute pancreatitis has an amylase and/or lipase laboratory test performed.

**DENOMINATOR:** All adult patients (18 years and older) with a diagnosis of acute pancreatitis and have an amylase and/or lipase laboratory test performed

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:** Non-chemistry pathology blood tests, non-blood tests, point of care testing, abdominal trauma

**NUMERATOR:** All adult patients (18 years and older) with a diagnosis of acute pancreatitis and have a lipase laboratory test performed

**RATIONALE:** Amylase and lipase are digestive enzymes normally released from the acinar cells of the exocrine pancreas into the duodenum. Following injury to the pancreas, these enzymes are released into the circulation. While amylase is cleared in the urine, lipase is reabsorbed back into the circulation. In cases of acute pancreatitis, serum activity for both enzymes is greatly increased.

Serum lipase is now the preferred test due to its improved sensitivity, particularly in alcohol-induced pancreatitis. Its prolonged elevation creates a wider diagnostic window than amylase. In acute pancreatitis, amylase can rise rapidly within 3-6 hours of the onset of symptoms and may remain elevated for up to five days. Lipase, however, usually peaks at 24 hours with serum concentrations elevated for 8-14 days. Therefore, it is far more useful than amylase when the clinical presentation or testing has been delayed for more than 24 hours. Current guidelines and recommendations indicate that lipase should be preferred over total and pancreatic amylase for the initial diagnosis of acute pancreatitis and that the assessment should not be repeated over time to monitor disease prognosis. Repeat testing should only be considered when the patient has signs and symptoms of persisting pancreatic or peripancreatic inflammation, blockage of the pancreatic duct or development of a pseudocyst. The combination of amylase and lipase has been discouraged as it only marginally improves the diagnostic efficiency of either marker alone, and it increases the cost of investigation.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Effective Clinical Care

## MEASURE ID: NPQRPA1

**MEASURE TITLE:** Test Not Performed or Results Canceled

**MEASURE DESCRIPTION:** The percentage of tests that were not performed or results not available due to any of the following reasons: inadequate container, inappropriate volume, compromised sample, sample contamination, improper storage or transport; or any combination of these reasons

**INSTRUCTIONS:** This measure is to be reported for all laboratory tests ordered.

**DENOMINATOR:** All laboratory test orders within the reporting time frame

### DENOMINATOR EXCLUSIONS/EXCEPTIONS:

Point of care testing

**NUMERATOR:** All tests that were not performed or results not available due to any of the following reasons: inadequate container, inappropriate volume, compromised sample, sample contamination, improper storage or transport; or any combination of these reasons

**RATIONALE:** At a time when evidence-based laboratory medicine is increasingly used by health care professionals, the information provided by clinical lab tests helps to diagnose, make decisions for treatment, and monitor patients as accurately and quickly as possible. Tests and results can be compromised for various reasons at various stages of the laboratory process. The pre-analytic stage is extremely important in this process.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Patient Safety; Efficiency and Cost Reduction Use of Healthcare Resources

## MEASURE ID: NPQRPA2

**MEASURE TITLE:** Test Not Reordered after Cancellation Due to Pre-Analytical Issue or Error (Within 24 Hours - Inpatient)

**MEASURE DESCRIPTION:** Percentage of tests that were reordered as a result of that test not being performed or results not available due to any of the following reasons: inadequate container, inappropriate volume, compromised sample, contamination, improper storage or transport; or any combination of these reasons

**INSTRUCTIONS:** This measure is to be reported for all laboratory tests ordered.

**DENOMINATOR:** All laboratory tests ordered and either not performed or results not available due to any of the following reasons: inadequate container, inappropriate volume, compromised sample, sample contamination, improper storage or transport; or any combination of these reasons

### DENOMINATOR EXCLUSIONS/EXCEPTIONS:

Outpatient and point of care testing

**NUMERATOR:** All laboratory tests that were not reordered or re-performed within 24 hours for patients with the status of inpatient due to a pre-analytical issue or error

**RATIONALE:** At a time when evidence-based laboratory medicine is increasingly used by health care professionals, the information provided by clinical lab tests helps to diagnose, make decisions for treatment, and monitor patients as accurately and quickly as possible. Tests and results can be compromised for various reasons at various stages of the laboratory process. The pre-analytic stage is extremely important in this process.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Patient Safety; Efficiency and Cost Reduction Use of Healthcare Resources

## MEASURE ID: NPQRPA3

**MEASURE TITLE:** Test Not Reordered after Cancellation Due to Pre-Analytical Issue or Error (Within 60 days - Outpatient)

**MEASURE DESCRIPTION:** Percentage of tests that were reordered as a result of that test not being performed or results not available due to any of the following reasons: inadequate container, inappropriate volume, compromised sample, contamination, improper storage or transport; or any combination of these reasons

**INSTRUCTIONS:** This measure is to be reported for all laboratory tests ordered.

**DENOMINATOR:** All laboratory tests ordered and either not performed or results not available due to any of the following reasons: inadequate container, inappropriate volume, compromised sample, sample contamination, improper storage or transport; or any combination of these reasons

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:**  
Inpatient and point of care testing

**NUMERATOR:** All tests that were not reordered or re-performed within 60 days for patients with the status of outpatient due to a pre-analytical issue or error

**RATIONALE:** At a time when evidence-based laboratory medicine is increasingly used by health care professionals, the information provided by clinical lab tests helps to diagnose, make decisions for treatment, and monitor patients as accurately and quickly as possible. Tests and results can be compromised for various reasons at various stages of the laboratory process. The pre-analytic stage is extremely important in this process.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Patient Safety; Efficiency and Cost Reduction Use of Healthcare Resources

**MEASURE ID: NPQRCVTT1**

**MEASURE TITLE:** Time Interval: Sample Collection to Results Verified

**MEASURE DESCRIPTION:** Time interval of tests recorded from sample collection until results are verified (Clinical Pathology)

**INSTRUCTIONS:** This measure is to be reported for the laboratory tests in the numerator and denominator statements.

**DENOMINATOR:** All laboratory tests ordered in which time intervals are recorded. Laboratory tests include the following: CSF-WBC, Sodium, Potassium, Chloride, Calcium-total, Bicarbonate – CO<sub>2</sub>, Ammonia, Total Bilirubin – Newborn, Arterial Blood Gases – pH, PO<sub>2</sub>, PCO<sub>2</sub>, Glucose, Glucose – Newborn, Troponin, Carbamazepine, Phenobarbital, Acetaminophen, Gram Stain, Free Thyroxine, Prothrombin Time - PT, Partial Thromboplastin Time - PTT, International Normalized Ratio – INR, Hematocrit, Hemoglobin, Platelet Count

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:**  
Point of care testing

**NUMERATOR:** The time interval in minutes as noted in the measure description. Laboratory tests include the following: CSF-WBC, Sodium, Potassium, Chloride, Calcium-total, Bicarbonate – CO<sub>2</sub>, Ammonia, Total Bilirubin – Newborn, Arterial Blood Gases – pH, PO<sub>2</sub>, PCO<sub>2</sub>, Glucose, Glucose – Newborn, Troponin, Carbamazepine, Phenobarbital, Acetaminophen, Gram Stain, Free Thyroxine, Prothrombin Time - PT, Partial Thromboplastin Time - PTT, International Normalized Ratio – INR, Hematocrit, Hemoglobin, Platelet Count

**RATIONALE:** More than 7 billion clinical lab tests are performed in the U.S. each year. Clinical laboratory tests have an immeasurable impact on diagnostic and treatment decisions made by health care providers. At a time when evidence-based laboratory medicine is increasingly used by health care professionals, the information provided by clinical lab tests helps to diagnose, make decisions for treatment, and monitor patients as accurately and quickly as possible.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Efficiency and Cost Reduction  
Use of Healthcare Resources

**MEASURE ID: NPQRCVTT2**

**MEASURE TITLE:** Time Interval: Sample Collection to Sample Received

**MEASURE DESCRIPTION:** Time interval of tests recorded from sample collection time until sample is received in the laboratory (Anatomic and Clinical Pathology)

**INSTRUCTIONS:** This measure is to be reported for the laboratory tests in the numerator and denominator statements.

**DENOMINATOR:** All laboratory tests ordered in which time intervals are recorded. Laboratory tests include the following: CSF-WBC, Sodium, Potassium, Chloride, Calcium-total, Bicarbonate – CO<sub>2</sub>, Ammonia, Total Bilirubin – Newborn, Arterial Blood Gases – pH, PO<sub>2</sub>, PCO<sub>2</sub>, Glucose, Glucose – Newborn, Troponin, Carbamazepine, Phenobarbital, Acetaminophen, Gram Stain, Free Thyroxine, Prothrombin Time - PT, Partial Thromboplastin Time - PTT, International Normalized Ratio – INR, Hematocrit, Hemoglobin, Platelet Count

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:**  
Point of care testing

**NUMERATOR:** The time interval in minutes as noted in the measure description. Laboratory tests include the following: CSF-WBC, Sodium, Potassium, Chloride, Calcium-total, Bicarbonate – CO<sub>2</sub>, Ammonia, Total Bilirubin – Newborn, Arterial Blood Gases – pH, PO<sub>2</sub>, PCO<sub>2</sub>, Glucose, Glucose – Newborn, Troponin, Carbamazepine, Phenobarbital, Acetaminophen, Gram Stain, Free Thyroxine, Prothrombin Time - PT, Partial Thromboplastin Time - PTT, International Normalized Ratio – INR, Hematocrit, Hemoglobin, Platelet Count

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**MEASURE TYPE:** Process

**NQS DOMAIN:** Efficiency and Cost Reduction  
Use of Healthcare Resources

**MEASURE ID: NPQRCVTT3**

**MEASURE TITLE:** Time Interval: Sample Received to Results Verified / Case Signed Out

**MEASURE DESCRIPTION:** Time interval of tests recorded from the time a sample is received in the laboratory until results are verified (Clinical Pathology)

**INSTRUCTIONS:** This measure is to be reported for the laboratory tests in the numerator and denominator statements.

**DENOMINATOR:** All laboratory tests ordered in which time intervals are recorded. Laboratory tests include the following: CSF-WBC, Sodium, Potassium, Chloride, Calcium-total, Bicarbonate – CO<sub>2</sub>, Ammonia, Total Bilirubin – Newborn, Arterial Blood Gases – pH, PO<sub>2</sub>, PCO<sub>2</sub>, Glucose, Glucose – Newborn, Troponin, Carbamazepine, Phenobarbital, Acetaminophen, Gram Stain, Free Thyroxine, Prothrombin Time - PT, Partial Thromboplastin Time - PTT, International Normalized Ratio – INR, Hematocrit, Hemoglobin, Platelet Count

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:**  
Point of care testing

**NUMERATOR:** The time interval in minutes as noted in the measure description. Laboratory tests include the following: CSF-WBC, Sodium, Potassium, Chloride, Calcium-total, Bicarbonate – CO<sub>2</sub>, Ammonia, Total Bilirubin – Newborn, Arterial Blood Gases – pH, PO<sub>2</sub>, PCO<sub>2</sub>, Glucose, Glucose – Newborn, Troponin, Carbamazepine, Phenobarbital, Acetaminophen, Gram Stain, Free Thyroxine, Prothrombin Time - PT, Partial Thromboplastin Time - PTT, International Normalized Ratio – INR, Hematocrit, Hemoglobin, Platelet Count

**RATIONALE:** More than 7 billion clinical lab tests are performed in the U.S. each year. Clinical laboratory tests have an immeasurable impact on diagnostic and treatment decisions made by health care providers. At a time when evidence-based laboratory medicine is increasingly used by health care professionals, the information provided by clinical lab tests helps to diagnose, make decisions for treatment, and monitor patients as accurately and quickly as possible.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Efficiency and Cost Reduction  
Use of Healthcare Resources

**MEASURE ID: NPQRCVTT4**

**MEASURE TITLE:** Time Interval: Critical Value Reporting

**MEASURE DESCRIPTION:** Measurement of the time interval beginning when results are verified until the critical value is reported (Clinical Pathology)

**INSTRUCTIONS:** This measure is to be reported for the laboratory tests in the numerator and denominator statements.

**DENOMINATOR:** All laboratory tests ordered in which time intervals are recorded. Laboratory tests include the following: CSF-WBC, Sodium, Potassium, Chloride, Calcium-total, Bicarbonate – CO<sub>2</sub>, Ammonia, Total Bilirubin – Newborn, Arterial Blood Gases – pH, PO<sub>2</sub>, PCO<sub>2</sub>, Glucose, Glucose – Newborn, Troponin, Carbamazepine, Phenobarbital, Acetaminophen, Gram Stain, Free Thyroxine, Prothrombin Time - PT, Partial Thromboplastin Time - PTT, International Normalized Ratio – INR, Hematocrit, Hemoglobin, Platelet Count

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:**  
Point of care testing

**NUMERATOR:** The time interval in minutes as noted in the measure description. Laboratory tests include the following: CSF-WBC, Sodium, Potassium, Chloride, Calcium-total, Bicarbonate – CO<sub>2</sub>, Ammonia, Total Bilirubin – Newborn, Arterial Blood Gases – pH, PO<sub>2</sub>, PCO<sub>2</sub>, Glucose, Glucose – Newborn, Troponin, Carbamazepine, Phenobarbital, Acetaminophen, Gram Stain, Free Thyroxine, Prothrombin Time - PT, Partial Thromboplastin Time - PTT, International Normalized Ratio – INR, Hematocrit, Hemoglobin, Platelet Count

**RATIONALE:** In a rapidly changing information technology environment, lab results now compete with a chorus of alerts and alarms that physicians receive throughout their day, often from the very electronic health records designed to streamline communications. According to patient safety experts, the only way to improve communication around critical values will be for laboratorians and physicians to work closely to close the loop on follow-up for critical values and other abnormal results.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Patient Safety; Efficiency and Cost  
Reduction Use of Healthcare Resources



**MEASURE ID: NPQRCVTT5**

**MEASURE TITLE:** Rate of Critical Value Reporting for Cerebrospinal Fluid - White Blood Cell (CSF-WBC)

**MEASURE DESCRIPTION:** The percentage of CSF-WBC tests reported by a laboratory back to the ordering provider as critical when the CSF-WBC test results in a critical value

**INSTRUCTIONS:** This measure is to be reported for the laboratory tests in the numerator and denominator statements.

**DENOMINATOR:** All CSF-WBC laboratory tests ordered in which the result is a critical value

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:**  
Point of care testing

**NUMERATOR:** The number of times in which the critical value is reported by the laboratory for CSF-WBC testing via phone, or secure electronic transmission, such as text messaging, messaging through Laboratory Information Systems, Electronic Health Records systems, or email.

**RATIONALE:** In a rapidly changing information technology environment, lab results now compete with a chorus of alerts and alarms that physicians receive throughout their day, often from the very electronic health records designed to streamline communications. According to patient safety experts, the only way to improve communication around critical values will be for laboratorians and physicians to work closely to close the loop on follow-up for critical values and other abnormal results.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Patient Safety

**MEASURE ID: NPQRCVTT6**

**MEASURE TITLE:** Rate of Critical Value Reporting for Chemistry Tests

**MEASURE DESCRIPTION:** The percentage of chemistry tests; Sodium, Potassium, Chloride, Calcium, Bicarbonate, Ammonia, Total Bilirubin – Newborn, Arterial Blood Gases – pH, PO<sub>2</sub>, PCO<sub>2</sub>, Glucose, Glucose – Newborn, reported by a laboratory back to the ordering provider as critical when a chemistry test results in a critical value

**INSTRUCTIONS:** This measure is to be reported for the laboratory tests in the numerator and denominator statements.

**DENOMINATOR:** All chemistry tests ordered in which the result is a critical value for the following tests: Sodium, Potassium, Chloride, Calcium-total, Bicarbonate – CO<sub>2</sub>, Ammonia, Total Bilirubin – Newborn, Arterial Blood Gases – pH, PO<sub>2</sub>, PCO<sub>2</sub>, Glucose, Glucose – Newborn

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:**  
Point of care testing

**NUMERATOR:** The number of times in which the critical value is reported by the laboratory via phone, or secure electronic transmission, such as text messaging, messaging through Laboratory Information Systems, Electronic Health Records systems, or email for the following tests: Sodium, Potassium, Chloride, Calcium-total, Bicarbonate – CO<sub>2</sub>, Ammonia, Total Bilirubin – Newborn, Arterial Blood Gases – pH, PO<sub>2</sub>, PCO<sub>2</sub>, Glucose, Glucose – Newborn

**RATIONALE:** In a rapidly changing information technology environment, lab results now compete with a chorus of alerts and alarms that physicians receive throughout their day, often from the very electronic health records designed to streamline communications. According to patient safety experts, the only way to improve communication around critical values will be for laboratorians and physicians to work closely to close the loop on follow-up for critical values and other abnormal results.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Patient Safety

## MEASURE ID: NPQRCVTT7

**MEASURE TITLE:** Rate of Critical Value Reporting for Troponin

**MEASURE DESCRIPTION:** The percentage of troponin tests reported by a laboratory back to the ordering provider as critical when a troponin test results in a critical value

**INSTRUCTIONS:** This measure is to be reported for the laboratory tests in the numerator and denominator statements.

**DENOMINATOR:** All troponin tests ordered in which the result is a critical value

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:**  
Point of care testing

**NUMERATOR:** The number of times in which the critical value is reported by a laboratory via phone, or secure electronic transmission, such as text messaging, messaging through Laboratory Information Systems, Electronic Health Records systems, or email for troponin

**RATIONALE:** In a rapidly changing information technology environment, lab results now compete with a chorus of alerts and alarms that physicians receive throughout their day, often from the very electronic health records designed to streamline communications. According to patient safety experts, the only way to improve communication around critical values will be for laboratorians and physicians to work closely to close the loop on follow-up for critical values and other abnormal results.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Patient Safety

## MEASURE ID: NPQRCVTT8

**MEASURE TITLE:** Rate of Critical Value Reporting for Toxicology

**MEASURE DESCRIPTION:** The percentage of carbamazepine, phenobarbital, acetaminophen toxicology tests reported by a laboratory back to the ordering provider as critical when the test results in a critical value

**INSTRUCTIONS:** This measure is to be reported for the laboratory tests in the numerator and denominator statements.

**DENOMINATOR:** All carbamazepine, phenobarbital, and acetaminophen tests ordered in which the result is a critical value

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:**  
Point of care testing

**NUMERATOR:** The number of times in which the critical value is reported by a laboratory via phone, or secure electronic transmission, such as text messaging, messaging through Laboratory Information Systems, Electronic Health Records systems, or email for carbamazepine, phenobarbital, and acetaminophen tests

**RATIONALE:** In a rapidly changing information technology environment, lab results now compete with a chorus of alerts and alarms that physicians receive throughout their day, often from the very electronic health records designed to streamline communications. According to patient safety experts, the only way to improve communication around critical values will be for laboratorians and physicians to work closely to close the loop on follow-up for critical values and other abnormal results.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Patient Safety

## MEASURE ID: NPQRDA1

**MEASURE TITLE:** Total Discrepancies Overall Rate

**MEASURE DESCRIPTION:** Rate of major and minor discrepancies per overall cases evaluated

**INSTRUCTIONS:** This measure is to be reported on all anatomic pathology samples that are signed out.

**DENOMINATOR:** All anatomic pathology samples that are evaluated

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:** None

**NUMERATOR:** The number of reports that, upon review, contain both a major and minor discrepancy in the diagnosis when compared with the initial diagnosis on the same sample(s). A major diagnostic discrepancy is defined as one causing potential major harm to/impact on patient care. Examples of major discrepancies are; missed malignancy, over-diagnosis of malignancy and/or high-grade dysplasia, misclassification of malignancy or margin status that (typically) results in a treatment change. A minor diagnostic discrepancy is defined as a potential minor harm to/impact on patient care. Examples of minor discrepancies are; misclassification of a colon polyp resulting in change in follow-up, basal cell versus squamous cell carcinoma, Gleason grade/extent of prostate cancer not resulting in change in treatment

**RATIONALE:** Anatomic pathology errors are reported to occur in 1% to 43% of all anatomic pathology specimens, and this wide range reflects the variation in methods of detection and the definition of what constitutes as an error. On review of the literature, it is estimated that the frequency of errors in anatomic pathology ranged from 1% to 5%, although this frequency was largely based on studies using single-institution data. Historically, error detection in anatomic pathology most often depends on some form of secondary case review. Secondary case review has been built into some pathology quality assurance practices (e.g., review of a set percentage of cases, intradepartmental “difficult case” conferences, cytologic-histologic correlation, or review of all malignancies). An error detected by one of these processes may be referred to as a discrepancy or a difference in interpretation or reporting between two pathologists. Error detection rates based on the different methods of secondary review have been variably studied.

**OUTCOME OR HIGH PRIORITY:** No

**MEASURE TYPE:** Process

**NQS DOMAIN:** Patient Safety, Effective Clinical Care

## MEASURE ID: NPQRDA2

**MEASURE TITLE:** Major Discrepancy Rate

**MEASURE DESCRIPTION:** Rate of major discrepancies per overall cases evaluated

**INSTRUCTIONS:** This measure is to be reported on all anatomic pathology samples that are signed out.

**DENOMINATOR:** All anatomic pathology samples that are evaluated

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:** None

**NUMERATOR:** The number of reports that indicate only a major discrepancy occurred in the diagnosis when compared with the initial report diagnosis on the same sample(s). A major diagnostic discrepancy is defined as one causing potential major harm to/impact on patient care. Examples of major discrepancies are; missed malignancy, over-diagnosis of malignancy and/or high-grade dysplasia, misclassification of malignancy or margin status that (typically) results in a treatment change. A minor diagnostic discrepancy is defined as a potential minor harm to/impact on patient care. Examples of minor discrepancies are; misclassification of a colon polyp resulting in change in follow-up, basal cell versus squamous cell carcinoma, Gleason grade/extent of prostate cancer not resulting in change in treatment

**RATIONALE:** Anatomic pathology errors are reported to occur in 1% to 43% of all anatomic pathology specimens, and this wide range reflects the variation in methods of detection and the definition of what constitutes as an error. On review of the literature, it is estimated that the frequency of errors in anatomic pathology ranged from 1% to 5%, although this frequency was largely based on studies using single-institution data. Historically, error detection in anatomic pathology most often depends on some form of secondary case review. Secondary case review has been built into some pathology quality assurance practices (e.g., review of a set percentage of cases, intradepartmental “difficult case” conferences, cytologic-histologic correlation, or review of all malignancies). An error detected by one of these processes may be referred to as a discrepancy or a difference in interpretation or reporting between two pathologists. Error detection rates based on the different methods of secondary review have been variably studied.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Patient Safety, Effective Clinical Care

## MEASURE ID: NPQRDA3

**MEASURE TITLE:** Misidentified Cases

**MEASURE DESCRIPTION:** Rate of cases with incorrect patient demographics and/or anatomic location

**INSTRUCTIONS:** This measure is to be reported on all anatomic pathology samples that are signed out.

**DENOMINATOR:** All anatomic pathology samples that are evaluated

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:** None

**NUMERATOR:** The number of reports with incorrect patient demographics and/or anatomic location. Examples such as misspelled names, incorrect date of birth, left versus right, arm versus leg, etc.

**RATIONALE:** Anatomic pathology errors are reported to occur in 1% to 43% of all anatomic pathology specimens, and this wide range reflects the variation in methods of detection and the definition of what constitutes as an error. On review of the literature, it is estimated that the frequency of errors in anatomic pathology ranged from 1% to 5%, although this frequency was largely based on studies using single-institution data. Historically, error detection in anatomic pathology most often depends on some form of secondary case review. Secondary case review has been built into some pathology quality assurance practices (e.g., review of a set percentage of cases, intradepartmental “difficult case” conferences, cytologic-histologic correlation, or review of all malignancies). An error detected by one of these processes may be referred to as a discrepancy or a difference in interpretation or reporting between two pathologists. Error detection rates based on the different methods of secondary review have been variably studied.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Patient Safety, Effective Clinical Care

## MEASURE ID: NPQRDA4

**MEASURE TITLE:** Non-Diagnostic Error Rate

**MEASURE DESCRIPTION:** Rate of cases in which there is missing or incorrect information or typographical inaccuracies are present

**INSTRUCTIONS:** This measure is to be reported on all anatomic pathology samples that are signed out.

**DENOMINATOR:** All anatomic pathology samples that are evaluated

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:** None

**NUMERATOR:** The number of reports with inaccurate information such as missing or wrong submitting provider, procedures, dates, diagnostic codes, typographical errors and aberrations of electronic formats or transmission affecting the grammatical and clerical interpretation of the report and not the diagnosis

**RATIONALE:** Anatomic pathology errors are reported to occur in 1% to 43% of all anatomic pathology specimens, and this wide range reflects the variation in methods of detection and the definition of what constitutes as an error. On review of the literature, it is estimated that the frequency of errors in anatomic pathology ranged from 1% to 5%, although this frequency was largely based on studies using single-institution data. Historically, error detection in anatomic pathology most often depends on some form of secondary case review. Secondary case review has been built into some pathology quality assurance practices (e.g., review of a set percentage of cases, intradepartmental “difficult case” conferences, cytologic-histologic correlation, or review of all malignancies). An error detected by one of these processes may be referred to as a discrepancy or a difference in interpretation or reporting between two pathologists. Error detection rates based on the different methods of secondary review have been variably studied.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Patient Safety, Effective Clinical Care

## MEASURE ID: NPQRDA5

**MEASURE TITLE:** All Specimen Defect Rate

**MEASURE DESCRIPTION:** Rate of cases in which any specimen defect occurs

**INSTRUCTIONS:** This measure is to be reported on all anatomic pathology samples that are signed out.

**DENOMINATOR:** All anatomic pathology samples that are evaluated

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:** None

**NUMERATOR:** The number of cases in which a sample is not able to be processed or a defect in sample processing has occurred. A major defect is defined as a lost sample or material and/or inadequate dissection. A minor defect is defined as gross description errors and/or absent or inappropriate ancillary studies.

**RATIONALE:** Anatomic pathology errors are reported to occur in 1% to 43% of all anatomic pathology specimens, and this wide range reflects the variation in methods of detection and the definition of what constitutes as an error. On review of the literature, it is estimated that the frequency of errors in anatomic pathology ranged from 1% to 5%, although this frequency was largely based on studies using single-institution data. Historically, error detection in anatomic pathology most often depends on some form of secondary case review. Secondary case review has been built into some pathology quality assurance practices (e.g., review of a set percentage of cases, intradepartmental “difficult case” conferences, cytologic-histologic correlation, or review of all malignancies). An error detected by one of these processes may be referred to as a discrepancy or a difference in interpretation or reporting between two pathologists. Error detection rates based on the different methods of secondary review have been variably studied.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Patient Safety, Effective Clinical Care

## MEASURE ID: NPQRDA6

**MEASURE TITLE:** Major (Only) Specimen Defects Rate

**MEASURE DESCRIPTION:** Rate of cases in which a major defect in specimen processing occurs

**INSTRUCTIONS:** This measure is to be reported on all anatomic pathology samples that are signed out.

**DENOMINATOR:** All anatomic pathology samples that are evaluated

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:** None

**NUMERATOR:** The number of cases in which the sample is not able to be processed or is inadequately processed. A major defect is defined as a lost sample and/or inadequate dissection

**RATIONALE:** Anatomic pathology errors are reported to occur in 1% to 43% of all anatomic pathology specimens, and this wide range reflects the variation in methods of detection and the definition of what constitutes as an error. On review of the literature, it is estimated that the frequency of errors in anatomic pathology ranged from 1% to 5%, although this frequency was largely based on studies using single-institution data. Historically, error detection in anatomic pathology most often depends on some form of secondary case review. Secondary case review has been built into some pathology quality assurance practices (e.g., review of a set percentage of cases, intradepartmental “difficult case” conferences, cytologic-histologic correlation, or review of all malignancies). An error detected by one of these processes may be referred to as a discrepancy or a difference in interpretation or reporting between two pathologists. Error detection rates based on the different methods of secondary review have been variably studied.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Patient Safety, Effective Clinical Care

## MEASURE ID: NPQRDA7

**MEASURE TITLE:** Rate of Major Discrepancy in Diagnosis between Frozen Section and Final Diagnosis

**MEASURE DESCRIPTION:** Rate of major discrepancies when comparing diagnosis from a frozen section to the final diagnosis

**INSTRUCTIONS:** This measure is to be reported on all specimens that have a frozen section diagnosis.

**DENOMINATOR:** All frozen section specimens accessioned and evaluated in the laboratory

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:**  
A sample in which a frozen section is not performed

**NUMERATOR:** The number of reports where a frozen section is performed, and in which there is a major diagnostic discrepancy between that of the frozen section and the final diagnosis. A major diagnostic discrepancy is defined as one causing potential major harm to/impact on patient care. Examples of major discrepancies are: missed malignancy, over-diagnosis of malignancy and/or high-grade dysplasia, misclassification of malignancy or margin status that (typically) results in a treatment change. A minor diagnostic discrepancy is defined as a potential minor harm to/impact on patient care. Examples of minor discrepancies are; misclassification of a colon polyp resulting in change in follow-up, basal cell versus squamous cell carcinoma, Gleason grade/extent of prostate cancer not resulting in change in treatment.

**RATIONALE:** Intra-operative consultation with frozen section is an important component in the management of surgical patients. Frozen sections are performed when a rapid pathologic diagnosis is required during the performance of a surgical procedure. Examples of rapid interpretations that may be needed include surgical resection margin evaluation for malignant neoplasms, diagnosis of an unexpected disease process in order for the surgeon to decide what to do next, or adequacy interpretations to evaluate whether appropriate tissue has been obtained for further workup of a disease process.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Patient Safety

## MEASURE ID: NPQRDA8

**MEASURE TITLE:** Rate of Surgical Pathology Case Review

**MEASURE DESCRIPTION:** Rate of retrospective review of all surgical pathology cases

**INSTRUCTIONS:** This measure is to be reported on all surgical pathology cases.

**DENOMINATOR:** All surgical pathology cases

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:** None

**NUMERATOR:** The number of surgical pathology cases that have been reviewed. Reviewed means that the pathology case has been examined by at least a second pathologist

**RATIONALE:** While numerous studies have shown that case reviews help detect interpretive diagnostic errors, there have been limited efforts to formalize this practice as a strategy to reduce errors. In considering processes occurring in surgical pathology and cytology, targeted case reviews are a potential component of a quality assurance plan aimed proactively at preventing errors before they have potential adverse impact on patient care. After a diagnosis is rendered, re-evaluation of case material by various QA measurements often occurs. These QA strategies are employed by practicing laboratories, not only as a means of decreasing diagnostic error, but also to meet regulatory guidelines for accreditation. Secondary case review has been built into some pathology quality assurance practices (e.g., review of a set percentage of cases, intradepartmental “difficult case” conferences, cytologic-histologic correlation, or review of all malignancies). Secondary case review also occurs in hospital patient-centered conferences (e.g., tumor board); external consultation practices; or at the behest of clinicians, who may initiate communication when the pathology report does not correlate with the clinical findings. An error detected by one of these processes may be referred to as a discrepancy or a difference in interpretation or reporting between two pathologists. Error detection rates based on the different methods of secondary review have been variably studied.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Patient Safety

## MEASURE ID: NPQRDA9

**MEASURE TITLE:** Rate of Preliminary Anatomic Diagnosis (PAD) Sign Out

**MEASURE DESCRIPTION:** Rate of autopsy preliminary anatomic diagnoses (PAD) signed out in less than two business days

**INSTRUCTIONS:** This measure is to be reported on all anatomic pathology autopsy cases.

**DENOMINATOR:** All anatomic pathology autopsy cases

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:** None

**NUMERATOR:** The number of autopsy cases that have a PAD reported in less than two business days

**RATIONALE:** Autopsy followed by histopathological examination of the tissues remains an important step for the detection of disease and for further evolution of medicine. Many studies have proven the utility and indispensability of autopsies, without which a complete and accurate diagnosis sometimes cannot be made. In multiple studies spanning many decades, authors have demonstrated that the autopsy uncovers previously undiagnosed major findings, such as cancer, cirrhosis, or cardiovascular disease, in up to 50% of cases. In approximately 9% of these cases, the most serious undiagnosed findings likely affected patient outcome.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Population/Community Health

## MEASURE ID: NPQRDA10

**MEASURE TITLE:** Rate of Review of Pap Test Samples Interpreted as Negative

**MEASURE DESCRIPTION:** Rate of Pap test samples interpreted as negative by the cytotechnologist that are reevaluated by a pathologist or a qualified supervisory cytotechnologist prior to reporting

**INSTRUCTIONS:** This measure is to be reported on all negative Pap test samples.

**DENOMINATOR:** All Pap test samples reported as negative

**DENOMINATOR EXCLUSIONS/EXCEPTIONS:** None

**NUMERATOR:** The number of Pap test samples reported as negative by a cytotechnologist that were reviewed by either a pathologist or a qualified supervisory cytotechnologist prior to reporting

**RATIONALE:** CLIA regulations specify that at least 10% of samples interpreted as negative by each cytotechnologist be re-screened by a pathologist or a qualified supervisory cytotechnologist prior to reporting. Specimens from women considered to be at increased risk for cervical cancer must be included in the review process. The laboratory must have a clearly defined policy of its definition of high risk as well as its method for random selection of cases. Several quality control/quality assurance measures for cytopathology have been specified by CLIA. All quality assurance processes must be described and documented in a quality assurance program in the laboratory.

**MEASURE TYPE:** Process

**NQS DOMAIN:** Patient Safety, Effective Clinical Care