Comprehensive Metabolic Panel

Background Information
The Comprehensive Metabolic Panel (CMP) is a standardized panel of tests that provides information about the status of kidneys, liver, electrolyte and acid/base balance, blood sugar and blood proteins. These tests include: total protein, albumin, total calcium, total bilirubin, alkaline phosphatase (ALP), aspartate aminotransferase (AST), glucose, blood urea nitrogen (BUN); creatinine, potassium, chloride, bicarbonate, anion gap, alanine aminotransferase (ALT), and estimated glomerular filtration rate (eGFR) for outpatients. Abnormal results, particularly in more than one test, may reflect conditions to be further examined by a healthcare provider.

Clinical Indications
The CMP is often ordered as part of a blood work-up for a medical exam or an annual physical, and over time provides a baseline of a patient's basic physiology. It is used to evaluate organ function and to check for conditions such as diabetes, and liver and kidney disease. It also is used to monitor effects of hypertension and other acute or chronic conditions, as well as to check for side effects in patients who are taking certain medications.

Blood for the CMP is usually taken after a 10-12 hour fast with no food or liquids (water only). Abnormal test results are sometimes followed up with other specific tests to confirm or rule out a suspected diagnosis.

Interpretation
Abnormal test results in some cases suggest a disease process, but may also arise due to statistical deviation from a population norm.

Increases or decreases in the measures of albumin, a small protein produced in the liver, as well as other proteins in serum, can indicate a change in nutritional status. In addition, a variety of acute and chronic illnesses can be indicated by measurements of electrolyte (and acid-base) imbalances. Increased concentrations of BUN and creatinine in the blood can arise from a decrease in kidney function. Elevated concentrations of bilirubin and the enzymes ALP, ALT and AST suggest liver dysfunction.

References
Test Name | Comprehensive Metabolic Panel  
Methodology | Varies according to analyte  
Specimen Requirements | Volume/Size: 1.0 mL; Type: Plasma; Tube/Container: Lithium heparin (Green)  
Minimum Specimen Requirements | Volume/Size: 0.5 mL  
Alternate Specimen Requirements | Volume/Size: 1.0 mL; Type: Serum; Tube/Container: SST (Gold); Transport Temperature: Ambient  
Clinical Information | Evaluation of metabolic disorders  
Billing Code | 79629  
CPT Code | 80053

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