

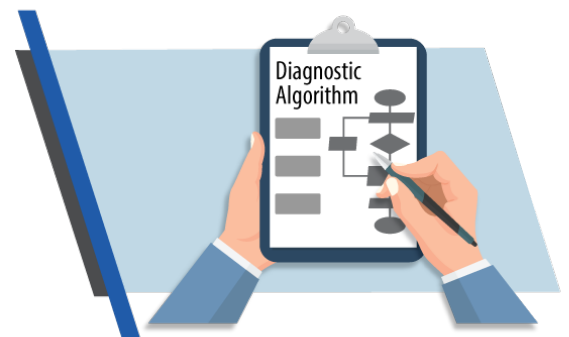
# Essential Steps of the Preanalytic System Infographic

The Total Testing Process is a guide to help clinical laboratory testing cycles remain accurate and efficient. It includes the preanalytic, analytic, and postanalytic systems which help diagnostic laboratories follow regulations set by the Clinical Laboratory Improvement Amendments (CLIA) and monitor quality to avoid common errors.

The first phase of the Total Testing Process is the preanalytic system, where the most diagnostic errors can occur. The preanalytic system begins in the patient care setting and ends in the laboratory setting. This process includes steps that happen before a patient specimen is tested.

## 1. Test Request

Test requesting occurs once a clinician decides to test a patient. Clinical laboratories need written or electronic patient test requests before any testing can begin. The laboratory should ensure that the test request contains all the details required for proper testing, including patient information, specimen type, and the test to be performed. It is important to request the right test, for the right patient, at the right time. This process leads to the right diagnostic actions to improve patient outcomes. Misdiagnoses can occur when an incorrect test is requested.

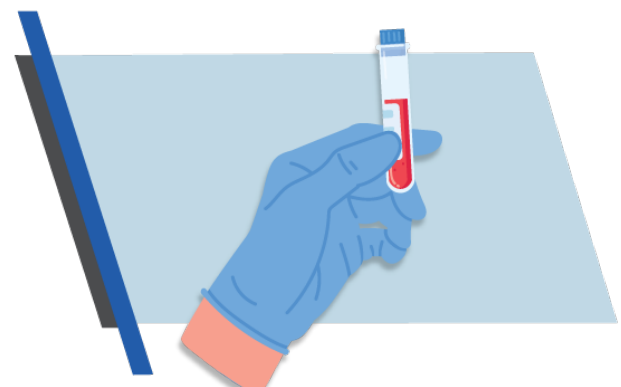


## 2. Specimen Collection

The laboratory should establish and follow written policies and procedures related to specimen collection, labeling, storage, and transportation. This information should be readily available to the clinician. These policies and procedures should be reviewed prior to specimen collection to ensure the specimen type and amount collected are correct.

Clinicians should also take care to avoid a contaminated or an unacceptable patient specimen as defined by the laboratory. Clinicians are responsible for ensuring that patient information on the authorized test request is correct and the correct patient and specimen is matched to the test request.

Clear and correct labels should be applied as soon as a specimen is collected. Labels should also be checked to verify that the patient's name and a unique patient identifier such as the patient's date of birth are listed. The label should also include the date and time of collection, and the specimen source as appropriate. After specimen collection specific specimen storage and preservation procedures outlined by the laboratory should be followed.



### 3. Specimen Transport

In this step, the patient specimen is transferred to the laboratory. The clinician collects the specimen in a primary collection container and seals it in a secondary leak-proof container such as a biohazard specimen bag. The laboratory determines the proper specimen temperature to maintain and provides packing and shipping procedures as needed. The laboratory establishes policies and procedures for ensuring specimens are maintained within stated temperature ranges during transportation and may document the temperature upon receipt.



### 4. Specimen Receipt, Assessment, and Accession

The last step in the preanalytic system marks the transition from the patient-care setting to the laboratory setting, where the laboratory receives patient specimens. Each specimen is evaluated for laboratory-specific acceptance or rejection criteria.

Laboratory specimen rejection criteria may include:

- Poor condition upon arrival, such as specimen leakage or spills, or specimens that need to remain frozen after collection but appear thawed when arriving at the laboratory.
- Insufficient volume.
- Incorrect specimen type.
- Incorrect labeling.
- Incorrect temperature.
- Transfer delays.



The specimen is often assigned an accession number for tracking in the laboratory information management system. The laboratory documents the date and time a specimen is received.