



CLINICAL AND  
LABORATORY  
STANDARDS  
INSTITUTE

8th Edition

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# CLSI PRE02™

## Collection of Diagnostic Venous Blood Specimens

Sample

CLSI PRE02 provides procedures for the collection of diagnostic venous blood specimens, including line draws, blood culture collection, and venipuncture in children.

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A guideline for global application developed through the Clinical and Laboratory Standards Institute consensus process.

# Collection of Diagnostic Venous Blood Specimens

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## Abstract

Clinical and Laboratory Standards Institute PRE02—*Collection of Diagnostic Venous Blood Specimens* provides a descriptive, stepwise process and procedures reflecting the quality system essentials format for diagnostic venous blood specimen collection. Special considerations for collections from vascular access devices, blood culture collection, and collections in isolation environments are included, as well as how to handle emergency situations. An expanded appendix section provides helpful tips for collecting specimens from pediatric and other challenging patients.

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## Foreword

During the collection and handling of blood specimens, numerous errors can occur that pose significant and avoidable risks to the patient and the health care professional. When global standards are not implemented, it is more likely that patients will be injured during the procedure, biologically representative specimens will not be obtained from patients, and test results will not be comparable from one facility to another or between visits for the patient.

The process and procedures detailed in CLSI PRE02 are intended to prevent specimen collection errors that threaten specimen quality, protect health care professionals from accidental exposure, and protect patients from the injuries, complications, and medical mistakes that can result from improperly collected specimens.

Since 1977, CLSI has recognized the importance of the preexamination phase of laboratory testing, including correct blood specimen collection and handling. Highly sophisticated testing technology cannot produce a good result from a poorly collected specimen.

### Overview of Changes

CLSI PRE02-Ed8 replaces CLSI GP41-Ed7, published in 2017. Several changes were made in this edition, including:

- Removing duplicate information (ie, that included in CLSI PRE01<sup>1</sup>)
- Harmonizing content with other CLSI preexamination documents
- Updating references

**NOTE:** The content of CLSI PRE02 is supported by the CLSI consensus process and does not necessarily reflect the views of any single individual or organization.

### KEY WORDS

antecubital anatomy

blood specimen

complications from  
phlebotomy

patient identification

phlebotomist

phlebotomy

veins

venipuncture

# Chapter 1

## Introduction

Sample

# Collection of Diagnostic Venous Blood Specimens

## 1 Introduction

### 1.1 Scope

CLSI PRE02 establishes criteria for venous blood specimen collection for medical laboratory testing. These procedures are intended as an appropriate model for adoption by all health care providers responsible for blood specimen collection in outpatient and inpatient settings.

### 1.2 Standard Precautions

Because it is often impossible to know what isolates or specimens might be infectious, all patient and laboratory specimens are treated as infectious and handled according to “standard precautions.” Standard precautions are guidelines that combine the major features of “universal precautions and body substance isolation” practices. Standard precautions cover the transmission of all known infectious agents and thus are more comprehensive than universal precautions, which are intended to apply only to transmission of bloodborne pathogens. Published guidelines are available that discuss the daily operations of diagnostic medicine in humans and animals while encouraging a culture of safety in the laboratory.<sup>2</sup> For specific precautions for preventing the laboratory transmission of all known infectious agents from laboratory instruments and materials and for recommendations for the management of exposure to all known infectious diseases, refer to CLSI M29.<sup>3</sup>

### 1.3 Terminology

CLSI, as a global leader in standardization, is firmly committed to achieving global harmonization whenever possible. Harmonization is a process of recognizing, understanding, and explaining differences while taking steps to achieve worldwide uniformity. CLSI recognizes that medical conventions in the global metrological community have evolved differently in different countries and regions and that legally required use of terms, regional usage, and different consensus timelines are all important considerations in the harmonization process. CLSI recognizes its important role in these efforts, and its consensus process focuses on harmonization of terms to facilitate the global application of standards and guidelines. Table 1 is provided to clarify the intended interpretations of common terms.

**Table 1. Common Terms or Phrases With Intended Interpretations**

Term or Phrase	Intended Interpretation
“Needs to” or “must”	Explains an action directly related to fulfilling a regulatory and/or accreditation requirement or is indicative of a necessary step to ensure patient safety or proper fulfillment of a procedure
“Require”	Represents a statement that directly reflects a regulatory, accreditation, performance, product, or organizational requirement or a requirement or specification identified in an approved documentary standard
“Should”	Describes a recommendation provided in laboratory literature, a statement of good laboratory practice, or a suggestion for how to meet a requirement



### 2.8.1.2 Home Collections

Patients whose specimens are collected in their homes, where chairs with safety features are not available, must be placed in a recumbent position or in a chair with arm supports.

### 2.8.2 Recumbent Position

Health care professionals must position patients on their backs in a comfortable position by reclining the bed or phlebotomy chair or having patients lie flat after verification with the health care provider. For patients with whom communication is difficult (eg, sedated, cognitively impaired, language barrier), the health care professional should recline the patient with assistance, if necessary.

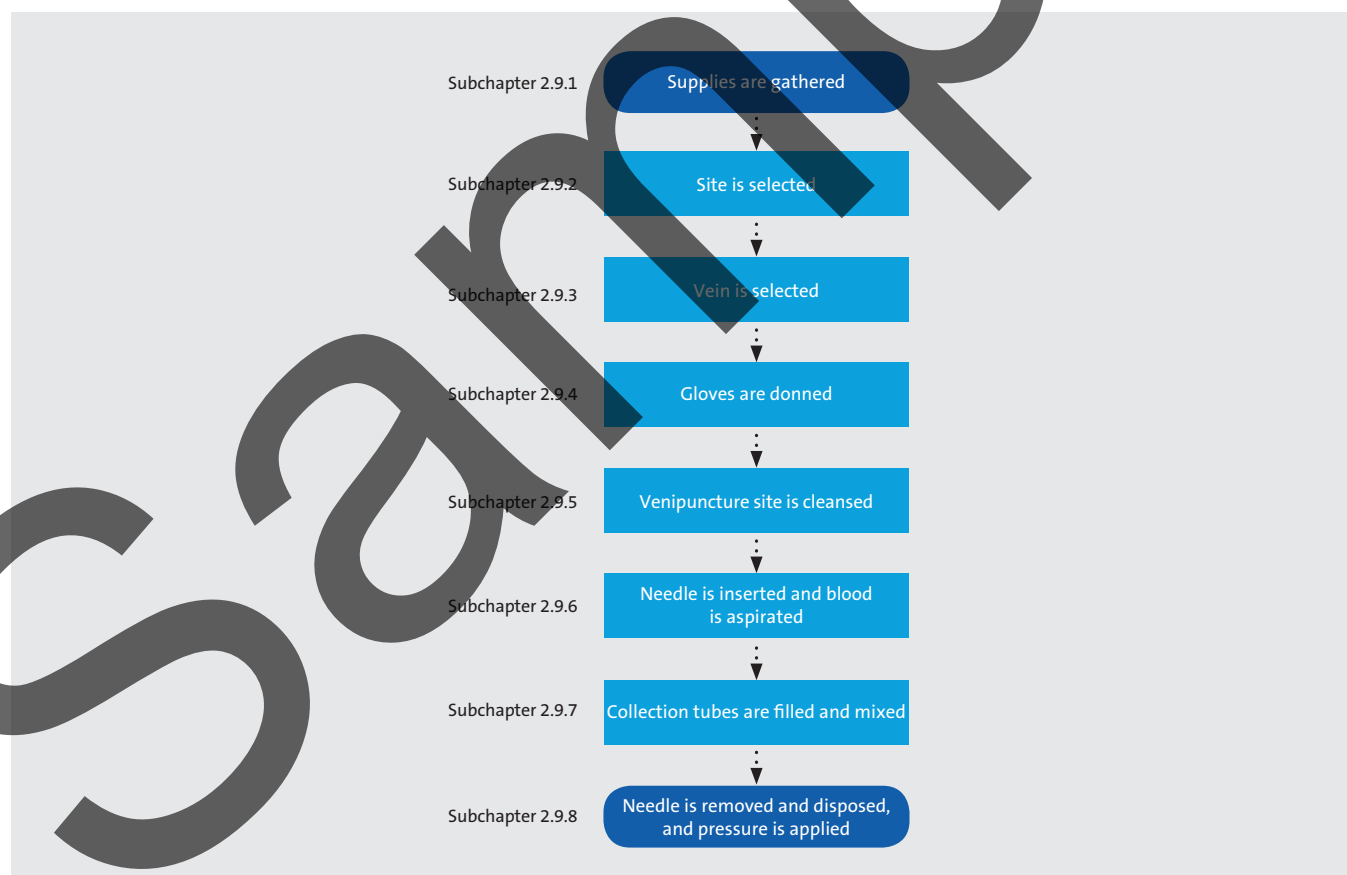
### 2.8.3 Pediatric Positioning

The pediatric patient can be securely positioned in the guardian's lap, or alternatively in a recumbent position on a table.

For infants, who are under 1 year of age and usually preambulatory, a heelstick (by capillary puncture) can be considered (refer to CLSI GP42<sup>12</sup> for information on capillary blood collection).

## 2.9 Specimen Is Collected

Figure 2 outlines the specimen collection process.



<sup>a</sup> Four basic symbols are used in this process flow chart: oval (signifies the beginning or end of a process), arrow (connects process activities), box (designates process activities), diamond (includes a question with alternative “Yes” and “No” responses).

**Figure 2. Specimen Collection Process Flow Chart<sup>a</sup>**

# Sample



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