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Procedures for the Collection of Diagnostic Blood Specimens by Venipuncture; Approved Standard—Sixth Edition

This document provides procedures for the collection of diagnostic specimens by venipuncture, including line draws, blood culture collection, and venipuncture in children.

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



Clinical and Laboratory Standards Institute

Advancing Quality in Health Care Testing

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Abstract

Clinical and Laboratory Standards Institute document H3-A6—*Procedures for the Collection of Diagnostic Blood Specimens by Venipuncture; Approved Standard—Sixth Edition* provides a descriptive, stepwise procedure for the collection of diagnostic blood specimens by venipuncture. Special considerations for venipuncture in children, line draws, blood culture collection, and venipuncture in isolation situations are included.

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Contents

Abstract.....i

Committee Membership..... iii

Foreword..... vii

1 Scope..... 1

2 Introduction..... 1

3 Standard Precautions..... 1

4 Definitions 1

5 Factors That Affect Laboratory Values 2

6 Facilities..... 2

 6.1 Venipuncture Chairs 2

 6.2 Hospital Area 2

7 Supplies..... 3

 7.1 Utility Carts..... 3

 7.2 Blood Collecting Trays..... 3

 7.3 Gloves 3

 7.4 Needles and Holders 3

 7.5 Sterile Syringes 4

 7.6 Venous Blood Collection Tubes 4

 7.7 Tourniquets 4

 7.8 Antiseptics 4

 7.9 Gauze Pads..... 4

 7.10 Puncture-Resistant Disposal Container..... 5

 7.11 Ice 5

 7.12 Bandages..... 5

 7.13 Warming Devices 5

 7.14 Test Reference Manual 5

8 Venipuncture Procedure..... 5

 8.1 Step 1: Prepare Accession Order 6

 8.2 Step 2: Approach and Identify the Patient; Sanitize Hands 6

 8.3 Step 3: Verify Patient Diet Restrictions and Latex Sensitivity 8

 8.4 Step 4: Assemble Supplies..... 8

 8.5 Step 5: Position Patient 9

 8.6 Step 6: Apply Tourniquet 10

 8.7 Step 7: Put On Gloves..... 13

 8.8 Step 8: Cleanse Venipuncture Site..... 13

 8.9 Step 9: Perform Venipuncture 14

 8.10 Step 10: Order of Draw 17

 8.11 Step 11: Release the Tourniquet 18

 8.12 Step 12: Place the Gauze Pad..... 18

 8.13 Step 13: Remove and Dispose of the Needle..... 18

 8.14 Step 14: Bandage the Arm 18

Contents (Continued)

8.15 Step 15: Label Blood Collection Tubes and Record Time of Collection18

8.16 Step 16: Observe Special Handling if Required19

8.17 Step 17: Send Blood Collection Tubes to the Proper Laboratories19

9 Venipuncture in Children and Difficult Collections20

9.1 Procedure20

9.2 Equipment.....20

10 Additional Considerations20

10.1 Monitoring Blood Volume Collected20

10.2 Hematoma.....20

10.3 Hemolysis20

10.4 Nerve Damage21

11 Special Situations.....21

11.1 Timed Intervals21

11.2 Specific Collection Techniques21

11.3 Indwelling Lines, Heparin or Saline Locks, Vascular Access Devices (VADs)22

11.4 Fistula22

11.5 IV Fluids23

11.6 Isolation24

11.7 Emergency Situations25

References.....27

Summary of Consensus Comments and Subcommittee Responses.....30

Summary of Delegate Comments and Subcommittee Responses.....36

The Quality Management System Approach40

Related CLSI Reference Materials41

Foreword

The errors that can occur during the collection and handling of blood specimens are potentially numerous, and the complications to the patient potentially harmful. Standards for venipuncture can reduce or alleviate many of these errors in much the same way that quality control standards have reduced errors within the laboratory.

Without fully implementing global standards, it is less likely that biologically representative specimens will be obtained from patients and that their results will be comparable from one institution to another. A comprehensive training program is needed to produce efficient, well-trained phlebotomists who collect specimens that accurately reflect the patients' physiology.

Various comments received on the previous edition of this standard were reviewed and incorporated where appropriate. All comments and the subcommittee's responses are summarized at the end of the document.

This document replaces the fifth edition approved standard, H3-A5, which was published in 2003. Several changes were made in this edition; chief among them are new illustrations of the anatomy of the antecubital area, instructions on recognizing nerve involvement, revised instructions for drawing blood from patients with vascular access devices, preparing sites for blood culture collections, and an additional verification step when labeling tubes. References were updated throughout.

Key Words

Accession, blood specimen, phlebotomist, venipuncture

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1 Scope

This document establishes criteria for the correct collection of blood specimens by venipuncture. These procedures are intended as a suitable model for adoption by all health care providers responsible for the collection and handling of blood specimens in both outpatient and inpatient settings.

2 Introduction

Since 1977, CLSI has recognized the quality requirement to direct significant attention toward the preexamination components of laboratory testing, including the correct collection and handling of blood specimens. Highly sophisticated testing technology cannot produce a good result from a poor specimen. Proper specimen collection and handling are of the utmost importance because significant errors occur in the preexamination phase of laboratory testing.¹

Preexamination errors can be numerous (eg, incorrect patient identification, incorrect order of draw, incorrect use of additive tubes, labeling errors, incorrect timing of collection, clerical errors). Standard procedures and protocols are intended to prevent these problems and protect against complications and patient mismanagement that can otherwise arise when specimens are improperly collected.

3 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 infectious agents and thus are more comprehensive than universal precautions, which are intended to apply only to transmission of blood-borne pathogens. Standard and universal precaution guidelines are available from the US Centers for Disease Control and Prevention.² For specific precautions for preventing the laboratory transmission of all infectious agents from laboratory instruments and materials and for recommendations for the management of exposure to all infectious disease, see CLSI document M29.³

4 Definitions

In the context of this publication, the terms listed below are defined as follows:

accession – the steps required to ensure that a specific patient specimen and the accompanying documentation are unmistakably identified as referring to the same patient.

angle of insertion – the angle formed by the surface of the arm and the needle entering the arm.

preevacuation – the creation of a vacuum (in a collection tube), induced by either the manufacturer or by the user immediately before a liquid specimen is taken.

specimen (patient) – the discrete portion of a body fluid or tissue taken for examination, study, or analysis of one or more quantities or characteristics to determine the character of the whole.