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Procedures and Devices for the Collection of Diagnostic Capillary Blood Specimens; Approved Standard—Fifth Edition

This document provides a technique for the collection of diagnostic capillary blood specimens, including recommendations for collection sites and specimen handling and identification. Specifications for disposable devices used to collect, process, and transfer diagnostic capillary blood specimens are also included.

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Abstract

NCCLS document H4-A5—*Procedures and Devices for the Collection of Diagnostic Capillary Blood Specimens; Approved Standard—Fifth Edition* provides a technique for the collection of diagnostic capillary blood specimens, including recommendations for collection sites and specimen handling and identification. Specifications for disposable devices used to collect, process, and transfer diagnostic capillary blood specimens are also included.

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Foreword

The NCCLS Area Committee on Hematology established an expert group as a subcommittee to recommend standards for blood collection procedures and for equipment used in such procedures. The Subcommittee on Blood Collection Procedures was charged with the responsibility of providing blood collection equipment manufacturers with appropriate guidelines for the component parts needed for blood collection activities, as well as guidance for modern clinical practice in the field. This subcommittee was composed of members representing industry, government, and the professions.

This document builds on the efforts of that subcommittee in establishing a state-of-the-art standard for skin puncture specimen collection, as well as devices used for such collection.

The NCCLS Area Committee on Hematology formed a new subcommittee to assist the area committee in updating this standard. The Subcommittee on Skin Puncture has reviewed the various comments on the previous standard (H4-A4) and incorporated changes where appropriate. All comments and the subcommittee's responses are summarized at the end of the document. Several changes have been made in this edition; chief among them is renaming the document and modifying the text to reflect the increased use and availability of skin incision devices as an alternative to puncture devices. In addition, the revised document reflects the availability of safer equipment including retractable skin puncture and incision devices as well as plastic-coated capillary tubes. This revised standard reflects changes in recommended sites for capillary blood collection, includes recommendations regarding proper patient identification procedures consistent with NCCLS standard [H3-A5](#), and was reorganized for clarity.

Key Words

Arterialized skin puncture blood, blood collection, blood collection technique, infant blood collection, lancet, skin puncture

Procedures and Devices for the Collection of Diagnostic Capillary Blood Specimens; Approved Standard—Fifth Edition

1 Scope

This standard describes general procedures for collecting diagnostic capillary blood specimens. It is intended for phlebotomists or other healthcare providers responsible for obtaining specimens from patients, as well as for manufacturers of skin puncture and incision devices and microcollection containers.

In addition, this document describes and recommends several disposable devices for collecting, processing, and transferring diagnostic capillary blood specimens. The recommendations are strictly limited to disposable products, which are used once per specimen or as defined by the manufacturer's detailed test technique.

2 Introduction

2.1 Pediatric Patients

Blood specimens obtained by skin puncture are especially important in pediatrics, because small but adequate amounts of blood for laboratory tests can be obtained with this technique. Obtaining blood by venipuncture from infants may be difficult and potentially hazardous,¹ and obtaining large quantities of blood, especially from premature infants, may result in anemia² (see Figure 1). Puncturing deep veins in children may cause:

- cardiac arrest;
- hemorrhage;
- venous thrombosis;
- reflex arteriospasm and gangrene of an extremity;
- damage to surrounding tissues or organs (e.g., puncturing the apex of the lung or piercing the trachea);
- infection; and
- injury from restraining the infant or child during the collection procedure.