



# A shift in venipuncture responsibility

## How different phlebotomy approaches can contribute to the quality of a venipuncture

Phoebe Jespers, Sjaellands Universitetshospital Roskilde

### Introduction

Collecting blood samples can be considered as a small part of a larger operation. More importantly, phlebotomy is a part in the journey of diagnosing and serves as a base in the treatment of the patient.

-  When the majority of the blood samples are taken by phlebotomists such as laboratory personnel, it is referred to as **centralized phlebotomy**. In contrast to
-  **decentralized phlebotomy** where the task or responsibility is passed on to non-laboratory personnel for example nursing staff.

This can be substantiated by some facts and figures from a European questionnaire study. The results show that various countries worldwide have their preferences regarding the centralized or decentralized approach. **The aim** of this literature study is to investigate why the responsibility of a venipuncture could also be given to laboratory scientists like it is given to nurses, and how this can contribute to improving the quality of a phlebotomy procedure. This aim is clarified by comparing aspects such as education, specific phlebotomy training and using experiences and reflections on centralized and decentralized phlebotomy approaches.

### Method consideration

The manner in which the content of this article will be clarified is by using scientific literature. Various aspects demonstrated in other literature studies were used to describe the purpose of this research. Online databases such as PubMed in combination with relevant keywords are used to find the proper articles that contain related information to the research question.

### Materials and methods

**Questionnaires:** results about how centralized and decentralized phlebotomy approaches are widely used in different European countries, including differences in personnel and education.

**Face-to-face interviews:** information about phlebotomy personnel experiences in relation to the awareness of phlebotomy mistakes during the preanalytical phase and possible efforts that can be taken to avoid them.

**Personal observations:** these observations gained during a traineeship in the department of clinical biochemistry in Denmark can be considered as additional supplements to the findings in scientific literature.

### Results

**Table 1** An overview of the three most common healthcare professions responsible for performing phlebotomy in the majority of European countries. In combination with the healthcare facility where they perform phlebotomy the most [1].

Profession	Performance (%)	Healthcare facility
Nursing staff	45-65	Inpatient units
Laboratory scientists	10-32	Outpatient units
Phlebotomy specialists	5-10	Outpatient academic units

**Table 2** The most common groups of phlebotomy errors that occur during the preanalytical phase. Each specified with examples and efforts of improvement as a clarification [2].

Preanalytical phlebotomy errors	Efforts of improvement
Patient identification <ul style="list-style-type: none"><li>incorrect verification</li></ul>	Awareness of risks
Collection of specimen <ul style="list-style-type: none"><li>wrong collection tube</li></ul>	Quality enhancement
Procedure handling <ul style="list-style-type: none"><li>prolonged tourniquet application</li></ul>	Professional competence

### Discussion

A discussion can be held about the variability that exists between these approaches whereby the results can be linked to each other.

**Link 1:** the main difference of phlebotomy personnel and their required education. The education of a laboratory scientist mainly focuses on collecting and analysis of samples, in short the technical care of a patient. Nursing staff have a wide range of tasks with their main focus on providing basic care to the patient.

**Link 2:** the option of specific training. A specific phlebotomy training can lead to a better quality since a specific training can be seen as a continuous education tool to maintain the techniques in a proper way.

**Link 3:** high number of preanalytical phlebotomy errors. Most phlebotomy errors often occur before and during the first steps in the venipuncture procedure, such as patient identification and errors in the general handling as cited in table 2. These errors are the most delicate with regard to the further process of a blood sample analysis.

There is no doubt that both laboratory scientists and nursing staff can perform a venipuncture perfectly. Different aspects behind the centralized and decentralized phlebotomy approaches can guarantee the quality of a venipuncture procedure.

[1] Lippi G, Simundic AM., Cornes M, Grankvist K, Nybo M, Kovalevskaya S, Sprong L, Sumarac Z, Church S. Survey of national guidelines, education and training on phlebotomy in 28 European countries: an original report by the European Federation of Clinical Chemistry and Laboratory Medicine (EFLM) working group for the preanalytical phase (WG-PA). Clin Chem Lab Med. 2013; 51(8): 1585-1593.

[2] Bölenius K, Brulin C, Graneheim U. H. Personnel's Experiences of Phlebotomy Practices after Participating in an Educational Intervention Programme. Nurs Res Pract. 2014; 2014: 538704.