

### EDITORIAL

#### What's your name? What's your date of birth?

These are the questions a patient is asked prior to blood collection. How often have you been asked these questions when you have to give a blood sample?

The risk of misidentification, which could lead to the wrong treatment and thus have serious or even fatal consequences, is greater and far more present than you may think. This risk has already been minimized by the use of patient ID wristbands and could be made safer by making it compulsory to scan the wristband for patient identification prior to sample collection.

However, even with this measure there is still the risk of using the wrong specimen tube. When working under stressful conditions, there is also a risk of labelling the sample with the wrong patient ID. This makes the risk of mix-ups and the resulting problems very real and very present.

**“Due to cut-backs (hospital reform etc.), the factor of time is becoming scarcer for medical staff and everything is always urgent.” \***

The application of modern IT systems in healthcare can be a support to the employees. The Greiner Sample Management System, developed by Greiner Bio-One, has been designed and developed exactly for this purpose. When the patient ID is scanned, the required tubes are indicated. The requested pre-barcoded tubes are assigned to the patient by another scan. This enables complete and consistent traceability of the sample. In this day and age, every healthcare institute should be able to provide this.

Even more important, is that the correct lab results reach the right patients, enabling the best possible treatment.

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### PRODUCT STUDIES

The elimination or at least the reduction of preanalytical errors is a central topic for “Greiner eHealth Technologies”. By applying GSMS (Greiner Sample Management System) in combination with pre-barcoded tubes, we aim to eliminate the rejection rate of samples. GSMS is a workflow management system which supports mobile sample collection by using pre-barcoded sample tubes.



Patient Identification & Blood Collection

Scan Sample-ID

Sample analysis in the laboratory

A study team from India reviewed the samples of in-house patients and outpatient departments. In total they reviewed 96,328 tubes, whereby 1.52% (1469 pcs.) of all samples were found unusable for the further analytical processing and were consequently rejected. The reasons were insufficient volume, haemolysis, sample with **insufficient information** and lipaemic samples.<sup>[1]</sup>

Students from the University of Applied Sciences in Austria have proven **the positive effects of using GSMS and pre-barcoded tubes in terms of efficiency in the hospital**. The results indicate an advantage in using GSMS as a software for the preanalytical process. In addition to the advantages of better quality and safety, the measurements pointed out that up to 53% time savings are possible.

Other significant benefits were also recognized, including:

- No patient mix-up
- Consistent digital preanalytical process
- Savings made due to elimination of additional labels and label printer
- Savings on less paper consumption (request sheets)<sup>[2]</sup>

Furthermore, GSMS supports the accreditation of laboratories through the following aspects:

- Information about collection time, sample transportation (e.g. on ice, water bath,...), identification of sample taking person, requesting person, requested parameters, description of sample container, etc. are given.
- Use of pre-barcoded tubes (barcode quality based on ISO requirements) and the scan of the patient ID for identification will avoid mix-up problems and provide safety.

These are some of the requirements for accreditation of a European laboratory according to DIN EN ISO 15189.<sup>[3]</sup>

[1] [Ranjna Chawla, Binita Goswami, Devika Tayal, V Mallika: Identification of the Types of Preanalytical Errors in the Clinical Chemistry Laboratory: 1-Year Study at G.B. Pant Hospital, Labmedicine February 2010, Volume 41, Number 2: p. 89-92

[2] White Paper „Potential for Savings in a hospital with Greiner Sample Management System”, Greiner Bio-One GmbH

[3] [Medical laboratories - Requirements for quality and competence (ISO 15189:2012)]

## Electronic Sample Identification

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### APPLICATION

#### Patient identification

Identification of patients and samples are decisive stages in the preanalytical process. This is unfortunately where most errors occur, which can have serious consequences in the analysis process.

For identification, it is necessary to at least ask the complete name and date of birth. However, as this is often not carried out sufficiently we recommend scanning the patient's wristband for additional identification. In combination with our complete system solution, this guarantees maximum safety for preanalytics.

#### Current Sample Identification

Samples are identified by labelling either before or straight after sample collection. This step is known to be error prone and can be avoided by using of pre-labelled sample collection containers.

#### Best Practice

Vacurette Barcode Tubes in combination with a Sample Management System are easy to use. First a requisition is needed, no matter from which system it comes from. The safe patient identification via scan ensures patient safety and eliminates that error prone step. After the filled tubes have been scanned they are ready for the sorting process in the lab.



### FAQs



#### With the VACUETTE pre-barcode tubes, would it be possible that a barcode occurs twice?

No that's not possible. GBO has developed a specific barcode structure, with which it is possible to produce billions of unique barcode tubes. Our barcode label supplier guarantees a 100% control in meeting the requirements of that specific structure.

#### What happens with containers which can't be supplied prebarcoded at the moment?

For those containers which are not provided prebarcoded, we make use of "BB Barcodes". BB Barcodes are delivered on a roll and can be easily positioned on the mobile blood collection trolley. In case you need one, they are always ready to use.

#### Why was the decision made to use Code 128?

This is an ISO recommendation and to ensure compliance with ISO standards and compatibility with analyzers, it is necessary to follow their recommendations.

#### Why don't we use QR or Datamatrix code?

Compared to Code 128 the QR and datamatrix code is two-dimensional and can therefore save more information. However, the big disadvantage is that not all lab instruments can read 2D-codes. Code 128 meets the majority of needs.

#### Is information available about which analyzers can read the GBO barcode?

Instruments with integrated barcode scanner can read code 128 in "99%" of all cases. If a machine is not equipped with a barcode scanner, this can be upgraded. We have a database with an overview of all analyzers known to us. If there are any uncertainties, please let us know.

#### Can I use that system with my own printed barcodes?

In this case it's not possible to use your own printed barcodes due to the risk of duplicates (use of same barcodes) and mixing up samples. There is an opportunity to duplicate or generate new barcode in our software, but the main goal is to work with pre-barcode tubes, which are only then connected to the patient after sample collection and scanning.

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more information: