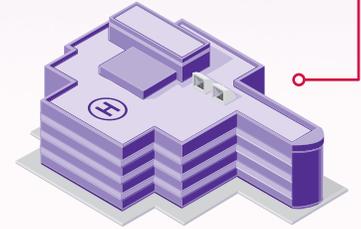




Conversion to **BD Microtainer® MAP** Microtube for Automated Process with K2EDTA May Reduce Patient Identification Errors and Hematology Specimen Processing Times



A Customer Analysis



The laboratory at a 350-bed Children's Hospital,

located in the Pacific Northwest (USA), processes approximately 20,000 microcollection specimens for complete blood counts a year. The majority (98%) of the microcollection tubes are from the pediatric population (<18 years of age), with 2% collected from adult patients with difficult venous access. Approximately 90% of the orders include an automated differential with an additional 1500 specimens collected just for reticulocyte counts, mainly from the pediatric oncology patients. Two-thirds of the specimens are capillary samples collected via heelstick, while the remaining one-third are collected via indwelling venous access devices or venipuncture and transferred to microcollection tubes via syringe or drip method. The current issues facing this laboratory regarding microcollection are: labeling (0.3%), specimen contamination, mainly with intravenous fluids (2%), insufficient volume for testing (2.5%), and specimen quality issues (i.e. clotting [5.3%]), resulting in an overall microcollection specimen rejection rate of approximately 10%.

Facilities current collection process

Blood specimens from patients admitted to the general floors are collected by the laboratory staff accounting for 35% - 40% of the total specimens collected.

These specimens are labeled at the bedside with lab-generated bar code labels.

The other 60% of blood specimens are collected by nurses and include pediatrics, ICU and the Emergency Department.

These specimens are labeled with a different Admission/ Discharge label that does not include a bar code and requires over-labeling when received by the laboratory.

This poses issues with efficiency

Microcollection samples cannot be labeled with either of the above labels; instead they need a smaller label that also does not include a bar code. The samples are placed on the hematology bench with the larger bar code label, but are not physically attached to one another. For hematology, the specimen bar code is scanned separately from the specimen tube to identify the sample in the site's Sysmex® XE-2100 instrument, introducing a step for possible specimen identification errors. These errors could lead to life-threatening consequences for the patient.



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The current process for microcollection hematology testing is:

1 Scan bar code label from separate sheet

2 Manually mix specimen

3 Check specimen manually for clots using two wooden sticks

4 Prepare peripheral blood smear (if required)

5 Manually process on hematology analyzer

6 Review results

7 Verify results

This process takes approximately 6.5 minutes per specimen and requires “hands-on” time by the laboratory technologist throughout the process. Venous hematology tubes are processed in batches via rack systems, rather than individually and currently take approximately 5 minutes to process per specimen; however much of that time is “hands off”. The venous tubes are placed directly into a rack that is placed on the Sysmex® XE-2100. The system scans the bar code directly from the primary tube, mixes the sample and analyzes the specimen via closed tube sampling through the stopper.

The **BD Microtainer® MAP Microtube for Automated Process** with K2EDTA is used to collect, anticoagulate, transport and store skin puncture blood specimens for the measurement of hematology parameters using automated processes. The BD MAP can be processed using a similar workflow as evacuated venous blood collection tubes, eliminating 4 of the 7 processing steps above.

By switching from their current microcollection tube to the BD Microtainer® MAP Microtube for Automated Process, this site can potentially:

- Eliminate possible patient identification errors and potentially life-threatening consequences
- Eliminate several processing steps
- Reduce laboratory technologist time by approximately 500 hours per year (number of specimens per year x .025 hour (1.5 minute) time savings per specimen)

- Three clearly **visible fill lines** to ensure proper collection volume
- **Number of inversions** illustrated on the tube label
- Full-size standard label with **V-Notch™** feature provides a visual guide for proper placement of labeling

In addition, the **BD Microtainer® MAP Microtube for Automated Process** has enhanced labeling features including:

To learn more about **BD products** and services designed to streamline your lab contact us at:

BD Global Technical Services at **1.800.631.0174 (USA only)**
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