TriCore Reference Laboratories

Implementing ID/Positive cassette and slide identification eliminates lab errors

Case Study

ID/Positive™ StainerShield®

Overview

Headquartered in Albuquerque, New Mexico, TriCore Reference Laboratories (www.tricore.org) is the state's leading medical laboratory. TriCore was established in 1998 as the result of a regional laboratory consolidation effort sponsored by University of New Mexico Health Sciences Center and Presbyterian Healthcare Services. TriCore provides laboratory services to its sponsor hospitals and clinics, and to physicians, hospitals, employers, and other healthcare providers throughout New Mexico, eastern Arizona, and southern Colorado. Services include routine and highly specialized tests to serve physicians, hospitals, nursing homes and companies that conduct workplace drug testing. TriCore has more than 1000 employees and a team of nationally recognized laboratory scientists, including clinical and anatomic pathologists.

TriCore Reference Laboratories Albuquerque, NM

The Challenge

Like many laboratories, TriCore is committed to excellence in patient care. TriCore is recognized throughout the region for providing comprehensive laboratory information of exceptional quality and value. Within the company's histology laboratory, more than 15 histotechs and 12 lab technicians process more than 800 cassette blocks and 1,500 slides each day. While the lab had implemented a number of measures to help eliminate cassette and slide labeling and identification errors, TriCore still experienced challenges in the process. The labs internal evaluation determined that the manual processes of labeling cassettes and slides with a pen or pencil had contributed to an unacceptable error rate. Through subsequent checks and rechecks, technicians brought the error rate down to less than one percent, but these painstaking, manual processes were extremely time consuming.

In addition to the errors, TriCore also struggled with workflow problems. The main reason TriCore could not manage more tissues and specimens was due to its manual processes and limitations in current lab technology. Like most high volume labs, processing hundreds of cassettes and slides each day takes time. Manually validating and re-keying 8-15 digit accession numbers into the laboratory's information system, as well as writing block numbers and other identifiers on the tiny surface of a cassette or slide added to the processing time and had proven a key reason for errors.

TriCore needed a specimen identification and error-proofing system that would allow its histotechs to print a single slide label at the microtome station, rather than waiting until after the staining process to label the slide. After evaluating a variety of solutions, the company determined that a bar code based system would help reduce errors and allow for a more consistent flow of work through the department with no bottlenecks before slide distribution. The lab also wanted to take bar coding one step further by replacing its inkjet cassette labeler, which was only providing a 70 percent read rate. The low read rate also explains why many technicians opted to hand write the information on the cassette versus using the inkjet labeler.

The company turned to General Data to provide a complete bar code tissue specimen identification and tracking solution, which would allow TriCore to positively identify and track specimens from the grossing station through the staining process and into archiving.

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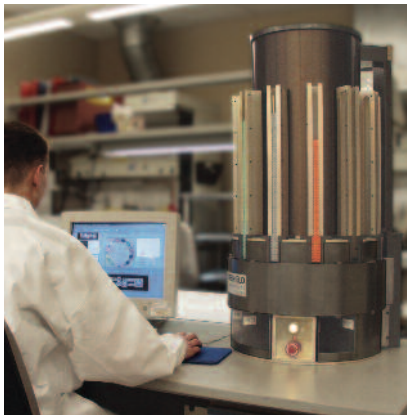
TriCore Implements ID/Positive Specimen Identification Solutions

To address these challenges, TriCore Reference Laboratories installed General Data's ID/Positive specimen identification and tracking system. The automated system, which includes the ID/Positive Laser Cassette Marker, StainerShield slide identification labels, handheld bar code scanners and ScanPrint™ smart printers, is designed to help improve workflow, reduce lab errors and improve patient safety.

"Implementation of the StainerShield system will completely change our departmental workflow and allow for error-free labeling of cassettes and slides," said Stephen Neumon, manager of anatomic pathology at TriCore Reference Laboratories. "The combination of a laser-based cassette imager that produces bar code resolution beyond the capabilities of other systems on the market with durable pre-stainer slide identification labels, scanners and printers has put our lab on the leading edge of a technology wave that truly is the future of the industry. Everyone is moving towards this type of system, and we are excited to be a progressive lab and an example for other institutions to follow."



A TriCore technician prints bar coded cassettes using the ID/Positive Laser Cassette Marker. The software enables the technician to specify data in text and bar code format, and select which cassette hopper to print from using the visual on-screen layout.

The ID/Positive Laser Cassette Marker provides permanent, indelible markings on tissue cassettes for histology, pathology and cytology laboratories. It uses a focused low power CO_2 laser to mark specially coated cassettes. The patented polymer coating on the cassette allows for well-defined, high contrast linear and two-dimensional bar codes, including DataMatrix. The markings can survive extended exposure to extreme temperatures and the chemicals, solvents and stains used for tissue processing.

In addition to the laser marker, which has produced nearly 100 percent read rate since its installation, the lab also has 14 cutting stations with General Data's ScanPrint™ direct thermal smart printers, which eliminate the need for computer workstations and allow histotechs to print one-off labels for better control and workflow. Technicians use a Symbol Technologies, Inc. scanner that plugs directly into the printer to scan the two-dimensional bar code on the tissue cassette to print on-demand StainerShield labels for a single specimen slide or a pre-determined number of slides. Having this capability at each station eliminates a number of steps in TriCore's previous slide preparation process.

General Data's StainerShield labels also allow TriCore to use two-dimensional bar codes to identify and track patient specimen slides from cutting, staining, final review and archiving. The bar coded tissue slide labels can withstand lab processes that include harsh chemicals, solvents and stains, and as a result, the bar codes can be consistently scanned from start to finish.

Cassettes printed using the ID/Positive Laser Cassette Marker. High-resolution DataMatrix bar code acts as a portable database, encoded with case and specimen information. When the cassette is scanned at the cutting station, the bar code drives the ScanPrint printer to print slide labels on-demand.

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"Our system is designed to help streamline lab workflow and reduce potential problem spots where a misidentified or mislabeled cassette or slide can result in lost time or lab results, require additional tests, or lead to a misdiagnosis," added Neumon. "We anticipate that with the laser imager, bar coded cassettes and slide labels and smart printers, we will be able to move a higher volume of specimens through the lab with fewer points of potential handling errors. The faster and more effectively we can do our jobs in the lab, the faster we can get results to physicians, diagnoses can be made and any necessary treatment can begin."

General Data was able to fully integrate ID/Positive and StainerShield without modification to TriCore's core laboratory information system. The ability to mark each cassette with a DataMatrix 2D bar code allows TriCore to treat each cassette as a portable database, using the laser imager and direct thermal printers to encode all of the relevant information about the specimen, including block and accession numbers, physician name and patient identifiers into the DataMatrix bar code.

A cassette is scanned at a cutting station into the ScanPrint system to print slide labels. The ScanPrint system does not require a PC workstation to process data and print labels. All data management is performed by the intelligent printer.

Results

ID/Positive has provided TriCore with a completely automated bar code based specimen identification and tracking system that has reduced errors and streamlined workflow productivity. Following the successful deployment of ID/Positive at its main lab facility, TriCore introduced additional systems at other lab facilities within its network.

"The ability to effectively bar code tissue cassettes and slides on demand and track them throughout the lab process is critical to the success of our lab," said Neumon. "General Data's solution integrated seamlessly with our existing laboratory information system and allows us to include better and significantly more information on a very tiny surface. The deployment was also completed without disrupting workflow and without requiring extensive IT involvement. The University of New Mexico Health Sciences Center, Presbyterian Healthcare Services, and other healthcare providers count on our lab to provide them with accurate, error-free results, and General Data's ID/Positive system will greatly enhance our ability to continue doing so."

Specimen slides labeled on-demand with StainerShield labels. These labels were printed by a technician scanning a cassette into the ScanPrint System at the cutting station. Labels contain specimen information, plus a unique identifier for that individual slide. These labels withstand the staining and slide preparation process, and will remain legible and scannable throughout the life of the slide.

With the automation tools and procedures in place, TriCore can process more slides and deliver results more efficiently, with fewer errors. For TriCore, that translates into a focus on patient safety and further enhances its mission of excellence in patient care.

About General Data

General Data Company Inc. is recognized as a premier provider of innovative bar code identification and automated data collection products and solutions that enable organizations to streamline workflow, error-proof processes, better manage critical data, and improve business process accuracy, productivity and performance. The company's patented healthcare products and solutions are designed to help providers improve patient safety and care, reduce medical errors, facilitate patient administration, and provide consumers with confidence in their healthcare providers. Founded in 1981, General Data is a privately held company with headquarters in Cincinnati, Ohio USA. More information on General Data's products and solutions can be found at http://www.general-data.com.

ID Solutions For Healthcare
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CONTACT: PH +1.800.733.5252 EXT 6472 EMAIL MEDSOLUTIONS@GENERAL-DATA.COM
WEB WWW.GENERAL-DATA.COM/HEALTHCARE

HEADQUARTERS: GENERAL DATA COMPANY INC 4354 FERGUSON DRIVE CINCINNATI OHIO 45245 USA