



Enhancing Efficiencies in Laboratory Specimen Management

High volumes of specimen testing require high-performance lab management

An infection outbreak—local, national or global—dramatically increases laboratory staff's workloads with huge volumes of specimens to test while under pressure to get results as fast as possible with no room for errors.

Not only can specimen identification errors negatively impact patients by delaying, impeding or misdirecting treatment options¹ (60% to 70% of which are determined by lab results²), but they can also slow efforts to reduce infection rates and end the infection outbreak. Additionally, lab errors can increase costs for the healthcare facility and damage the facility's reputation.

Barcode technology has become a proven solution for labs to boost specimen identification efficiency by automating data entry³ and reducing specimen identification error rates. A retrospective study revealed that barcode scanning and one-on-one specimen collection education resulted in a 90% reduction in specimen identification errors⁴.

Reduce Testing Identification Errors Amidst High Volume Demands

Barcode and RFID technologies, including scanners, label printers, handheld mobile computers and software, help labs serve a critical diagnostic role during an infection outbreak in several ways.

Capturing Specimen Data Efficiently and Accurately

Scanning specimen barcode or RFID labels ensures quick, reliable data capture that can aid diagnosis accuracy while maintaining the chain of custody that began at the patient bedside or a drive-through testing center. This practice also documents specimen receipt, initiation of testing and the technician who is handling the specimen—all of which are potentially valuable data in the event of questions surrounding specimen processing.

Enhancing Patient Safety

By eliminating the need for multiple data entries, barcode and RFID label printing and scanning reduce specimen misidentification errors. Also, these processes document the steps taken in specimen handling at any given time, so lab technicians can track specimens when necessary and ensure they are analyzed in a timely manner. Better specimen data-capture accuracy and tracking ability help lab technicians enhance patient safety.

Maximizing Workflow Efficiency, Minimizing Costs

Operational efficiency is a critical aspect of overall lab performance. Delayed identification of a single specimen can slow down the entire operation, causing multiple diagnosis delays. Barcode and RFID printing and scanning solutions designed for lab environments help prevent bottlenecks and maintain workflow efficiency by minimizing manual data entry.



Solutions for Specimen Management Accuracy and Efficiency

Zebra mobile computers, scanners, printers and specimen labels help accelerate the safety, accuracy and speed of laboratory specimen management.



Handheld Mobile Computers

Zebra TC52-HC mobile computers are designed specifically for healthcare use cases. With integrated, advanced scanning technology, Zebra TC52-HC devices rapidly capture 1D and 2D barcodes to scan specimen barcode labels and keep the identification process flowing seamlessly. They are highly durable with drop ratings suited to cement hospital floors, disinfectant-ready plastic and full-shift batteries, making them ideal for hectic lab environments.



Workforce Connect

Zebra designed its Workforce Connect solution to enable all healthcare professionals to make voice calls, send push-to-talk and secure text messages to connect with their peers—all with a single device.



Scanners

The Zebra DS8100-HC scanner series allows healthcare workers to capture specimen barcode data from almost any medium in most conditions, the first time. They are cordless for enhanced mobility and designed with healthcare plastics which reduce the spread of infections.



With a hybrid design to provide seamless switching between handheld and hands-free scanning, Zebra DS9908-HD healthcare scanners have barcode and RFID capabilities to help you establish accurate specimen labeling chain of custody.



Mobile and Desktop Printers

Zebra ZD410-HC and ZD420-HC desktop printers, and Zebra ZT411 and ZD500R RFID printers make it easy for healthcare workers to print barcode specimen labels and other materials in a fast-paced lab environment. They utilize thermal technology to transfer patient information to labels, eliminating the need to dispose of printer ribbons containing sensitive information. They feature plastics designed to tolerate continual cleaning and repeated exposure to disinfectant wipe downs.



Link-OS Intelligent Printer Operating System

Link-OS is Zebra's one-of-a-kind enterprise printer operating system. Enabling advanced connectivity capabilities, extensive device management and advanced privacy controls, no other printer OS delivers this level of intelligence and innovation.



Specimen Barcode Labels

Zebra specimen barcode labels are tested to stay affixed to the most challenging surfaces, such as small curved surfaces or bags, using flexible materials and special adhesives. They are designed to withstand specific temperatures in heating and cooling, and they resist xylene, alcohols, haematoxylin, and other solvents and stains. Boost specimen identification efficiency by automating data entry and reducing specimen identification error rates with Zebra specimen labels: IQ Colour, PolyPro 4000D, Z-Perform 2000D (not available in EMEA), Z-Select 2000D (only available in EMEA).



Specimen RFID Labels

Zebra offers end-to-end RFID solutions for healthcare facilities—including pre-tested RFID specimen labels made with the right materials and adhesives, along with the highest-performing thermal inlays and chips. Choose from the widest selection of in-stock items, ready to ship within 24 hours.

¹ deRin, G. (2010). "Pre-analytical workstations as a tool for reducing laboratory errors", *Journal of Medical Biochemistry*, 29(4), 315-324. doi:10.2478/v10011-010-0031.

² Green, S. F. (2013). "The cost of poor blood specimen quality and errors in preanalytical processes," *Chemical Biochemistry*, 46, 1175-1179.

³ "Barcode Labeling in the Lab—Closing the Loop of Patient Safety", *Zebra Technologies*, 2016.

⁴ "Specimen labeling errors: A retrospective study", *Online Journal of Nursing Informatics (OJNI)*, 19 (2), June 2015. <http://www.himss.org/ojni>.

To learn more about Zebra's laboratory management solutions, visit www.zebra.com/healthcare



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