

# IMPROVE PATIENT SAFETY AND CAREGIVER PRODUCTIVITY WITH BAR CODE SCANNING AT THE POINT OF CARE (BPOC)



## Global healthcare challenges: the prevalence of medical errors and emerging government regulations

Healthcare organizations all around the world are faced with two major issues: the vast number of medical errors that threaten patient safety and emerging government regulations to prevent those errors.

In the U.S. alone, the Institute of Medicine estimates that a minimum of 1.5 million events occur annually, resulting in approximately 7,000 deaths and a conservative cost of \$3.5 billion a year.<sup>1</sup> In Europe the issues are equally paramount. The Special Eurobarometer report reveals that 18 percent of patients in the 25 Member States experienced a serious medical error in their local hospitals.<sup>2</sup>

To address this issue, government bodies around the world have either enacted or are considering regulations that will require documentation to help prevent medical errors. As a result, hospitals must determine how to enable and prove compliance without requiring an already overburdened healthcare staff to complete additional paperwork — adding expenses that would further increase skyrocketing healthcare costs.

## The solution: real-time wireless data capture

Zebra's Healthcare Mobility Portfolio provides the tools you need to address both of these issues. Now, the medical workforce can automatically capture virtually any bar code as well as images, documents and signatures in a split second, eliminating the wasteful and error-prone process of capturing information with paper and pen — and then entering that handwritten information into the computer. A new level of efficiency and accuracy is achieved throughout your facility — from patient bedside to admitting, the emergency room, the pharmacy and storage supply areas:

- Medical errors are virtually eliminated, improving patient safety.
- Medical staff is more efficient, able to get more done, with the constant pin-point accuracy required in healthcare.
- Information required for regulatory compliance is captured easily and cost-effectively — without impacting productivity.
- Electronic recordkeeping replaces the need to photocopy documents and maintain paper files.



## APPLICATION BRIEF

### BAR CODE SCANNING AT THE POINT OF CARE (BPOC)



**WITH BAR CODE SCANNING AT THE POINT OF CARE, PATIENTS GET THE PEACE OF MIND THAT COMES FROM KNOWING THEY WILL ALWAYS RECEIVE THE RIGHT TEST RESULTS — AND THE RIGHT TREATMENT.**

The end result? Your patients get higher quality care. Your caregivers have a better working environment, one that gives them more time for direct patient care — instead of paperwork. And your facility benefits from the overall improvement in process efficiency, able to handle more patients with the same staff.

## The applications: BPOC and more at work in the hospital

- **Medication administration.** The ability to scan the bar codes on the patient wristband and the medication provides a split second verification that the right patient is about to be given the right medication, the right way at the right time. No extra paperwork is required, time is actually saved, while medication errors can be spotted before medication is administered. In addition, caregivers can also scan the bar code on their identity badges, creating an automatic audit trail that increases accountability.
- **Pharmacy procedures.** Bar code scanning can prevent errors at the start of the medication supply chain —the pharmacy. The ability to scan the bar code on medication and compare it to the medication order ensures that the right medication is prepared and issued for the right patient.
- **Enriched patient identification information.** With 2D imaging, a caregiver can capture a photo of a patient's face and other indisputable identifying marks (such as scars, birthmarks or tattoos) to prevent mistaken identity — especially helpful in ensuring that unconscious trauma patients receive the right medication, tests and surgical procedures.
- **Faster admission.** Multiple data capture options error-proof and streamline the admitting process, enabling faster treatment and a better healthcare experience. With 2D imaging, caregivers can capture signatures in the emergency room, right at the point-of-care. The ability to capture the 2D bar codes found on some driver's licenses and other identification cards enables the auto population of key fields on admission forms. A variety of documents can be captured in seconds and permanently appended to the patient's electronic record — including healthcare proxies, living wills and insurance cards — eliminating the time and cost associated with photocopying documents and managing paper files.
- **Specimen collection.** The ability to scan a patient wristband and print out a bar code label right at patient bedside for a specimen container (requires an optional mobile printer) ensures that specimens are collected from the right patient. As a result, the right patient receives the right test results — and the right treatment.
- **Better inventory visibility.** When bar code scanning replaces manual paper-based inventory procedures, hospitals can cost-effectively take rapid and accurate inventories on a daily basis — from the contents of the supply cabinets on each hospital floor to the pharmacy shelves. The result is the visibility required to improve the speed and accuracy of the ordering and replenishment process, ensuring that the caregivers always have the right supplies and medications on hand to treat patients.
- **Automatic chain of custody for controlled substances.** As sensitive items such as narcotics move throughout the hospital, a quick scan of the employee badge and the item provides visibility into the complete chain of custody — ensuring availability, improving accountability and deterring theft.
- **Operating room inventory.** A cordless scanner is ideal in operating rooms, allowing nurses to scan inventory prior to and after a procedure. The hospital now has the real-time inventory information required to ensure timely ordering. The last known location of surgical instruments and equipment is captured for easy tracking. And caregivers can instantly spot any missing items to ensure that items are not inadvertently left inside the patient.
- **Charge capture.** The ability to scan consumables as they are utilized in the emergency room, operating room, recovery room and patient room enables the instant and accurate capture of all items utilized for a specific patient. As a result, all appropriate charges are captured on patient invoices, protecting the financial health of the hospital.
- **Dietary management.** When food service workers deliver meals, a quick scan of the bar code label on the food order and the patient wristband ensures that the right patient is about to receive the right meal at the right time. As a result, dietary errors are virtually eliminated. For example, patients that are fasting in preparation for a procedure cannot accidentally receive a meal. And specially prepared allergen-free meals — for example for patients with a gluten, dairy or nut allergy — are always delivered to the right room.
- **Wound management.** Images of existing wounds can be captured, enabling documentation of bedsores that were already present as well as the progressive healing of a wound.
- **Bed management.** When a bar code is associated with a patient room, a quick scan can indicate when a patient arrives or departs. That real-time visibility helps improve the efficiency of bed management, minimizing the wait times for incoming patients and improving bed utilization.

## BENEFITS OF MOBILE DATA CAPTURE IN HOSPITALS AND CLINICS

- Error proofs the medication supply chain from pharmacy to patient
- Ensures proper patient identification with the ability to capture photos of faces and other identifying marks
- Error-proofs specimen management, ensuring that the right patient received the right diagnosis and the right treatment
- Enables cost-effective real-time inventory visibility throughout the hospital, ensuring timely ordering of mission critical supplies
- Streamlines admission with the ability to capture and append electronic versions of documents to patient files — from insurance cards and driver's licenses to healthcare proxies
- Scanning of consumables at patient bedside ensures the capture of all appropriate charges, protecting the hospital's financial health
- Ability to scan the bar code on a meal tray and the patient wristband ensures that the right patients receive the right meal
- The scan of a bar code to indicate when a patient arrives and departs a room provides real-time visibility into bed status, minimizing patient wait times and improving bed utilization.



## APPLICATION BRIEF

### BAR CODE SCANNING AT THE POINT OF CARE (BPOC)

## A fast payback and a low total cost of ownership (TCO)

Our Healthcare Mobility Portfolio provides the high value required to justify the deployment of mobility, with benefits for patients, caregivers and your IT staff.

- Safer higher quality care
- A better patient experience
- Increased caregiver productivity
- Cost-effective regulatory compliance
- Better inventory management — from consumable supplies to surgical instruments
- Easy low-cost remote device management
- Superior 'uptime' through built-in device durability, pro-active device management and services that include all-inclusive next-day device replacement



**FOR MORE INFORMATION ON HOW YOU CAN IMPROVE PATIENT SAFETY AND OVERALL OPERATIONAL EFFICIENCY IN YOUR HEALTHCARE ENVIRONMENT PLEASE VISIT [WWW.ZEBRA.COM/HEALTHCARE](http://WWW.ZEBRA.COM/HEALTHCARE), ACCESS OUR GLOBAL CONTACT DIRECTORY AT [WWW.ZEBRA.COM/CONTACT](http://WWW.ZEBRA.COM/CONTACT), OR CONTACT YOUR LOCAL ZEBRA AUTHORIZED PARTNER.**

## Everything you need for end-to-end mobile data capture throughout your facility



When you choose Zebra mobility solutions to error-proof and streamline your facility processes, you can count on:

### THE RIGHT PRODUCT FOR EVERY JOB

Our fully-featured mobile computers give nurses and other caregivers the ability to capture bar codes and other information, as well as access crucial applications housed in the hospital computer system or on the Internet, mobile nurse call, push-to-talk instant voice communications and more. And our cordless and corded bar code scanners allow you to add automated data capture to any computer — from computers-on-wheels (COWs) and workstations-on-wheels (WOWs) to the lab, pharmacy and admitting.

### DISINFECTANT-READY TO PREVENT THE SPREAD OF GERMS

All products designed for BPOC are built to withstand constant disinfecting with the harsh chemical cleaners required to prevent the spread of infection — including handheld mobile computers as well as bar code scanners and their cradles.

### THE DURABILITY REQUIRED FOR DEPENDABLE EVERYDAY USE.

Our healthcare mobility portfolio is built to handle around-the-clock use, every minute of every day of the year. Our best-in-class drop specifications combine with environmental sealing to ensure dependable operation, despite the inevitable everyday drops, bumps and spills.

### MISSION CRITICAL SCANNING PERFORMANCE ON EVERY BAR CODE

Bar codes can easily become scratched, smudged or torn as they move through the hospital. But Zebra's industry-leading scanning technology allows healthcare workers to capture literally any 1D or 2D bar code, with or without damage, with record speed and reliability — even small dense codes on rounded surfaces, such as patient wristbands and small test tubes.

### THE RIGHT ERGONOMICS

Your healthcare workers need to stay focused on the task at hand. That's why all our healthcare mobility products are easy to use and easy to hold. Your caregivers can count on a highly intuitive experience that virtually eliminates the need for training. And since all products provide a natural feel, regardless of hand-size, your workers get the crucial all day comfort required to help ensure rapid adoption of mobile data capture.

### HIGH-RESOLUTION IMAGES

Documents are easy to read, complete with fine print — from release forms to driver's licenses. Photographs provide needed details — regardless of whether they are documenting a wound or utilized for patient identification. And digital signatures are crisp and legible.




### EASY CENTRALIZED REMOTE MANAGEMENT


Your mobile devices are always on the move. With Zebra's Mobility Services Platform (MSP), your IT personnel can deploy, update, monitor, troubleshoot and resolve device issues from a single centralized location. IT time is freed for more important projects. And the constant visibility into device health helps IT proactively resolve issues — before caregivers are impacted.

### INDUSTRY-LEADING SERVICE PLANS FOR MAXIMUM UPTIME

Available for our entire Healthcare Mobility Portfolio, Zebra's Service from the Start program covers everything — even accidental damage. Other options allow us to ship a ready to use replacement device overnight — we can even install your applications and configure settings on replacement mobile computers.

## The ZEBRA Healthcare Mobility Portfolio

SB1-HC SMART BADGE		MC40-HC DURABLE MOBILE COMPUTER		MC55A0-HC RUGGED MOBILE COMPUTER	
					
<a href="http://www.zebra.com/sb1hc">www.zebra.com/sb1hc</a> Compact, lightweight and wearable device includes integrated Push-To-Talk (PTT), robust bar code scanning and support for basic data applications in patient-facing colors; Wi-Fi 802.11b/g/n and Bluetooth wireless connectivity		<a href="http://www.zebra.com/mc40hc">www.zebra.com/mc40hc</a> All-touch Android mobile voice and data, offering the styling of popular consumer smartphones, with the benefits of a true enterprise device in patient-facing colors; Wi-Fi 802.11a/b/g/n and Bluetooth wireless connectivity		<a href="http://www.zebra.com/mc55a0hc">www.zebra.com/mc55a0hc</a> All-in-one compact high power platform for desktop-like application performance and comprehensive mobile voice and data in patient-facing colors; Wi-Fi 802.11a/b/g and Bluetooth wireless connectivity	
USAGE					
Patient room — complete 'in-the-pocket' mobile solution		•		•	
Patient room — COW/ WOW integration					
Patient room — permanent installation					
Patient transport	•				
Supply chain/inventory/ asset mgmt	•	•		•	
Durability					
Drop specification	4 ft./1.2 m	4 ft./1.2 m		6 ft./1.8 m	
Tumble specification		250 1.6 ft./0.5 meter tumbles (500 drops) at room temp. per IEC tumble specifications		250 3.2 ft./1 m tumbles (equivalent to 500 hits) per IEC tumble specifications)	
Sealing	IP54	IP54		IP64	
Disinfectant ready	•	•		•	
Data Capture					
Bar codes	1D/2D — including healthcare specific GS1 and ISBT 128 codes as well as tiny dense codes on test tube vials				
Scanning performance	Laser-like high performance first-time every time scanning of any bar code — damaged, poorly printed, and scratched				
Omni-directional scanning	•	•		•	
Other data capture options		8 MP camera to capture bar codes, photos, videos, signatures and documents		3.2 MP camera to capture bar codes, photos, videos, signatures and documents	
Management					
Management	Zebra's Mobile Device Management (MDM) solutions		Zebra's Mobile Device Management (MDM) solutions		Zebra's Mobile Device Management (MDM) solutions
Service					
	Service from the Start with Comprehensive Coverage (all inclusive) and Advance Exchange Support (next day device replacement)		Service from the Start with Comprehensive Coverage (all inclusive) and Advance Exchange Support (next day device replacement); Managed Device Service		Service from the Start with Comprehensive Coverage (all inclusive) and Commissioning Service/Express Shipping (replacement device with all applications and settings, ready for use out of the box)
Extras					
	<ul style="list-style-type: none"><li>3.0 in. E Ink Pearl display for easy reading in any lighting condition</li><li>Enterprise Push-to-Talk — communicate with different types of devices on different networks, including Zebra's two-way radios</li><li>Multi-user log-on for shared use</li><li>Integrated accelerometer enables low-power badge mode and screen rotation</li><li>Native FIPS 140-2 Level 1 certification for easy HIPAA compliance *available Q2 2014</li></ul>		<ul style="list-style-type: none"><li>Extensions (Mx) by Zebra turns standard Android into a true enterprise-class OS</li><li>Multi-user log-on for shared use</li><li>Superior voice collaboration — communicate with different types of devices on different networks, including Zebra's two-way radios</li><li>Sensing technology maximizes battery shift times and screen real-estate</li></ul>		<ul style="list-style-type: none"><li>Native FIPS 140-2 Level 1 certification for easy HIPAA compliance</li><li>Additional rugged specifications: patented Monocoque housing improves structural stability; patented industrial grade connector; magnesium casing; improved construction to protect display</li><li>Superior voice collaboration — communicate with different types of devices on different networks, including Zebra's two-way radios</li><li>Sensing technology maximizes battery shift times and screen real-estate</li></ul>

MC75A0-HC RUGGED MOBILE COMPUTER		MT2000 HANDHELD MOBILE TERMINAL		DS6878-HC CORDLESS HANDHELD 2D IMAGER		DS4208-HC CORDED HANDHELD 2D IMAGER	
							
<a href="http://www.zebra.com/mc75a0hc">www.zebra.com/mc75a0hc</a> All-in-one high power platform for desktop-like application performance and comprehensive mobile voice and data in patient-facing colors; Wi-Fi 802.11a/b/g and Bluetooth wireless connectivity		<a href="http://www.zebra.com/mt2000">www.zebra.com/mt2000</a> Industry first hybrid design marries the brainpower of a mobile computer and the simplicity of a bar code scanner in an ultra-ergonomic gun-style device; Wi-Fi 802.11a/b/g and Bluetooth wireless connectivity		<a href="http://www.zebra.com/ds6878hc">www.zebra.com/ds6878hc</a> Bluetooth cordless freedom in patient-facing colors can be installed in patient rooms; integrated with COWs/WOWs; and placed in lab work stations		<a href="http://www.zebra.com/ds4208hc">www.zebra.com/ds4208hc</a> Corded general purpose value-priced scanner in patient-facing colors for integration COWs/WOWs	
USAGE							
Patient room — complete 'in-the-pocket' mobile solution		•					
Patient room — COW/ WOW integration				•		•	
Patient room — permanent installation				•		•	
Lab workstations				•		•	
Supply chain/inventory/ asset mgmt		•					
Durability							
Drop specification		6 ft./1.8 m		6 ft./1.8 m		6 ft./1.8 m	
Tumble specification		1,000 1.6 ft./0.5 m tumbles (equivalent to 2,000 hits) per IEC tumble specifications		250 3.2 ft./1.0 m tumbles (equivalent to 2,000 hits) per IEC tumble specifications		N/A	
Sealing		IP54		IP43		IP43	
Disinfectant ready		•		•		•	
Data Capture							
Bar codes		1D/2D — including healthcare specific GS1 and ISBT 128 codes as well as tiny dense codes on test tube vials					
Scanning performance		Laser-like high performance first-time every time scanning of any bar code — damaged, poorly printed, and scratched					
Omni-directional scanning		•		•		•	
Other data capture options		3.2 MP camera to capture bar codes, photos, videos, signatures and documents		Photos, signatures and video		Photos, signatures and documents	
Management							
Management		Zebra's Mobile Device Management (MDM) solutions			RSM, SMS and 123Scan <sup>2</sup>		
Service							
Recommended Service		Service from the Start with Comprehensive Coverage (all inclusive) and Commissioning Service/Express Shipping (replacement device with all applications and settings, ready for use out of the box)		Service from the Start with Comprehensive Coverage (all inclusive) and Advance Exchange Support (next day device replacement)			
Extras							
		• Native FIPS 140-2 Level 1 certification for easy HIPAA compliance • Superior voice collaboration — communicate with different types of devices on different networks, including Zebra's two-way radios • Sensing technology maximizes battery shift times and screen real-estate		• Pre-loaded MCL Client for easy connection to existing applications and rapid development and deployment of new applications		• Battery can charge directly from USB connection, eliminating the need for a power supply • Audio feedback can be configured by user for quiet operation in patient environments	
						• Audio feedback can be configured by user for quiet operation in patient environments	

## ABOUT ZEBRA

**Zebra Technologies Corporation** is a global leader respected for innovation and reliability. Zebra offers an extensive range of asset-tracking technologies incorporating mobile computing, data capture, barcode, wireless LAN, RFID, location systems and Zatar™, the cloud-based Internet of Things (IoT) platform. These technologies make businesses as smart and connected as the world we live in. Zebra's tracking and visibility solutions transform the physical to digital, creating the data streams businesses need in order to simplify operations, know more about their business, and empower their mobile workforce.

Zebra's products and solutions are used around the world by industries including healthcare, retail, transportation and logistics, manufacturing and sports—for a variety of applications from improving patient safety; to eliminating checkout lines with mobile devices; to streamlining warehouse operations and adding a new dimension to professional sports and entertainment with real-time information.

1. Medication Errors Injure 1.5 Million People and Cost Billions of Dollars Annually; Report Offers Comprehensive Strategies for Reducing Drug-Related Mistakes (Press Release); Institute of Medicine (IOM), July 20, 2006 (<http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=11623>)
2. Special Eurobarometer 241 / Wave 64.1 & 64.3 – TNS Opinion & Social – Medical Errors; European Commission; Survey requested by Health and Consumer Protection Directorate General of the European Commission; Page 16; 2006