



Your Guide

Point of care

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USING MOBILE PRINTING TECHNOLOGY TO IMPROVE PATIENT SAFETY AT POINT-OF-CARE

In a wide range of business sectors, mobile printing technology has changed operational processes fundamentally. Manufacturers use mobile technologies to identify and track objects throughout production, and it helps retailers to better manage supply chains. In healthcare, today's mobile printing solutions save time, money and risks to patient health. The availability of versatile mobile and wireless computers and printers has enabled the redesign of many applications, with wireless networks and mobile hospital workstations leading to safer working practices and increased staff efficiency.

Wireless mobile printers now offer performance, features and functionality that make them the practical business solution in an environment where staff are constantly on-the-move. Users can print materials on-demand and at bedside, enabling them to use timely, accurate medication information to support the physical process of care delivery. Confirmation of patient identification and treatment requirements are simple, and legislative needs met.

Barcodes and beyond

Among the technology solutions that help to eliminate medication errors, barcode systems have risen to the top of industry preference due to their relative ease of implementation, demonstrated ROI and broad array of applications. Barcode wristbands are also viewed by healthcare CIOs and clinicians as a forerunner of more comprehensive patient safety initiatives such as e-prescribing, computerised physician order entry (CPOE) and the electronic medical record (EMR). With tools like these, healthcare organisations can achieve new standards of patient care.

Mobile printing capabilities are central to the effective delivery of barcode solutions and other healthcare applications including:

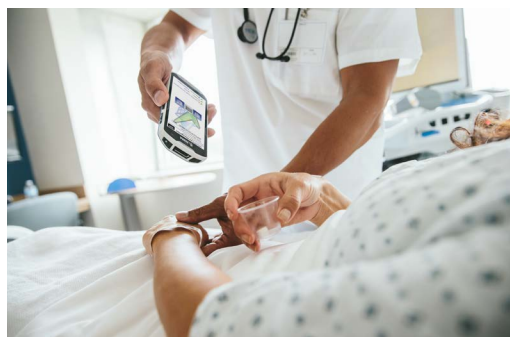
- Unit-dose medication
- Specimen collection
- Blood administration
- Track and trace systems
- Pharmacy services

Mobile printers are lightweight, easy-to-use and durable, offering excellent print quality along with support for a variety of media. Balance, grip, and ease of carrying and operation are crucial in increasing, not hindering staff productivity as they go about their working day.

They are available in multiple designs to meet specific healthcare needs and budgets. Devices can be worn on a belt or shoulder strap, or securely mounted on a vehicle or a cart that can be easily moved from ward to ward.

Wearable solutions

Staff can wear printers using either a belt clip or a shoulder strap, giving them the flexibility to keep their hands free for other tasks and reducing fatigue, especially in high-use environments. A wireless connection between the wearable printer and the mobile computer maximises mobility and enhances usability, while eliminating the need for cumbersome, hazardous communication cables.



Cart-mounted solutions

Stationary and tabletop printers offer mobility when users mount them on a movable cart. This configuration is ideal for when the application requires more media capacity or added functionality beyond the capabilities of a smaller mobile printer. Typical applications include print jobs that require high-volume output or a variety of media sizes, colours, formats, etc. Cart-mounted printers require a power or battery supply, as well as a connection to a PC or portable computer, through either a communications cable or the 802.11a/b/g/n wireless network.

THE BENEFITS OF WIRELESS COMMUNICATIONS

Most mobile printers offer wireless capabilities for connecting to a local area network (LAN) and enterprise resource planning (ERP) applications from anywhere in the facility. They are typically used in conjunction with handheld, wearable, or mountable computers. The printer receives commands from the mobile computer, smartphone, or tablet through either a cabled or a wireless connection using Bluetooth®, with the user generating relevant information and print jobs or receiving tasks pushed down directly from the wireless network. A wide range of print jobs, label formats, variable data and other relevant patient and facility information can be communicated.

Bluetooth technology

Bluetooth applications require a Bluetooth radio in the printer as well as the mobile handheld terminal, smart phone, or tablet. Bluetooth targets wireless, low-power consumption applications, enabling computers, printers, and other devices to interface with each other without routing through a centralised hub or server. Maximum range is about 30 feet, enabling mobile printer usage located away from a stationary PC. The main benefit is that once paired, only these two devices can communicate to each other at one point in time, improving security.



Mobile printer and device management

Mobile printers can meet many print needs that require fine-tuning of features such as darkness setting and print speed. These are key to high quality documents and labels, particularly important where, for instance, information needs to be scanned on a regular basis.

Print methods and media

Thermal-based technology is ideal for mobile printing because of the high print quality output, media flexibility and the low-maintenance, durable nature of the equipment. Impact printers are more vulnerable in busy environments, often lack the print quality to produce scannable barcodes, and contain no optimisations for adhesive label media.

There are two thermal printing methods, direct thermal and thermal transfer. Each method uses a thermal printhead that applies heat to the surface undergoing marking. Thermal transfer printing heats a ribbon to melt durable, long-lasting images onto a wide variety of materials. Direct thermal printing does not use a ribbon, and instead creates the image directly on the chemically treated label material. Direct thermal media is more sensitive to light, heat and abrasion, which reduces the overall label life.

Direct thermal applications

Direct thermal printers can satisfy most mobile application needs. Top-coated media resists ultraviolet light and remains readable for years. Many types of liner-less media are also available, which eliminate waste and disposal problems associated with peel-away liners used with adhesive labels.



Thermal transfer applications

Thermal label printers are ideal for barcode printing because they produce accurate, high-quality images with excellent edge definition. Thermal printers are engineered to print within tight tolerances and to produce the exact bar widths that successful barcode printing and scanning require.

Typical mobile printers accept a variety of label, tag, ticket, and other media for producing durable specimen labels, inspection labels, and other labels and documents. Users can customise blank label stock to include colour and graphics, with the variable text and barcode printed on-demand from the mobile printer.

While the majority of route accounting customers accept 4-inch-wide delivery confirmation receipts, mobile printers can print variable information. This satisfies customer desires to keep using familiar forms, while eliminating handwriting and manual recording that is often responsible for errors in patient identification.

Power management

How the mobile printer manages power consumption is important to overall battery life and application effectiveness. To optimise user and equipment productivity, it is essential to have enough battery life to power printers for the length of a shift.

Battery life varies widely based on how the printer is used. Print volume, label size, the amount of wireless transactions, and other factors affect battery recharge and replacement rate. Users should test their applications to ensure that the batteries they use consistently perform as needed and will not contribute hidden expenses to the total cost of ownership. Some mobile printers have adapters so they can be powered from vehicle batteries. A variety of battery chargers are also available.

Optimising power usage and prolonging battery life is critical for mobile applications. Advances in this area have resulted in solutions that deliver faster processing and throughput with lower power drain, giving mobile workers higher-quality printing and more uptime on the job, at the same time saving an estimated 20 to 30% of battery power.

Mobile equipment hygiene

Healthcare-associated infections (HCAIs) pose a serious risk to patients, staff and visitors. They can incur significant costs for the NHS and cause significant morbidity to those infected. As a result, infection prevention and control is a key priority for the NHS.*

Today's mobile printers are constructed using durable, disinfectant-ready materials so they can be quickly and easily cleaned in between each use and are easy to maintain. Both the materials used in construction and product design help to eliminate the transmission of harmful bacteria.

SUMMARY

Today's generation of mobile printers are key enablers for improving business processes, helping you and your staff to deliver better quality patient care with more accuracy and certainty. Printing at the point-of-use can deliver efficiency gains and cost savings to entirely new areas of the business. As a pioneer in wireless printing technology and a leading provider of mobile printing solutions, Zebra Technologies is working with healthcare customers to make the most of new technologies and create new systems that deliver measurable business value.



* Source: <https://improvement.nhs.uk/resources/healthcare-associated-infections/>

For more information about how Zebra healthcare solutions could help you to mitigate risk, improve patient safety and increase organisational efficiency, visit www.zebra.com/healthcare



NA and Corporate Headquarters
+1 800 423 0442
inquiry4@zebra.com

Asia-Pacific Headquarters
+65 6858 0722
contact.apac@zebra.com

EMEA Headquarters
zebra.com/locations
contact.emea@zebra.com

Latin America Headquarters
+1 847 955 2283
la.contactme@zebra.com