Improving patient safety at the point of care in theatre and in hospitals

Mobility prevents errors and improves the quality of care in theatre and inside the hospital walls. Medics can easily document information on injuries and initial care and append to a soldier's electronic medical record (EMR), while healthcare providers inside the hospital walls can ensure accurate medication administration and specimen collection.

Challenge: accurate information at the point of care

In the mission critical environment of healthcare, providing the highest quality of patient care requires the most efficient and accurate action. Whether your healthcare providers are in Veteran's Administration (VA) healthcare facilities, in military base hospitals or in field triage units in active combat zones, paper-based processes and lack of real-time medical information at the point of care can reduce effectiveness and increase the opportunity for errors.

For medics in theatre, the challenge is even greater. These first responders must make informed decisions on how to best treat severe injuries in the most extreme conditions imaginable — and must rapidly and accurately document injuries and the care provided.

Solution: improve efficiency, speed and accuracy at the point of care with mobile computing

Motorola's healthcare mobility solutions can help you reach a new level of efficiency and deliver better patient care. With the right handheld mobile device in the hands of your healthcare professionals, real-time access to patient data and other critical applications are always at their fingertips.

Electronic applications replace paper forms, providing the drop down menus required to auto fill fields, significantly automating data entry. Bar code scanning at a patient's bedside can validate that the correct patient is receiving the right medication, before medication is administered.

Real-time wireless access to healthcare systems also increases the speed of care. Physicians can order tests and view results as soon as they are available. And nurses can monitor patient vital signs and receive nurse calls while on the move during their shift.

Mobile computers are also invaluable for medics in theatre. Information on medical procedures can be pre-loaded onto mobile computers, eliminating the need to carry bulky paper-based materials and freeing space in the backpack for more medical supplies. If a wireless connection is available in the field, medics can capture and transmit information to a doctor back at the base for assistance in determining the best course of care for an acute wound — or to a hospital to ensure readiness the moment a patient arrives.

BENEFITS

- Reduce errors by eliminating manual paper-and-pen based processes

- Enable immediate decisions at point of care

- Ensure accuracy in medication administration and specimen collection

- Track critical medical supplies in real-time

- Improve efficiency and productivity of healthcare providers

Applications inside the hospital campus

Medication administration

With a mobile computer in hand, medication can be administered quickly and accurately. Nurses can scan the patient wristband, the medication and their own ID card in seconds, ensuring that the correct medication is administered to the right patient. The patient's record is updated instantly, providing the real-time visibility required to prevent the inadvertent administration of a duplicate dose at shift change. And internet and intranet access enables doctors and nurses to check drug interactions and more.

Patient monitoring

Inside the hospital, nurses are typically located at a centralized nursing station to view patient vital signs and the status of medical equipment in the patient's room. But with a wireless mobile computer, they have the ability to check patient vital signs and make needed adjustments to medical equipment, all while moving through the hospital to provide care wherever it is needed.

Specimen collection

Clinicians and lab techs must locate and check paperwork to determine what tests have been ordered, verify patient identity through a visual check of the patient wristband, and then manually label the specimen. With a mobile device in hand, a quick scan of the bar code on the specimen order, the patient wristband and the specimen label container provides a triple check for accuracy from the point-of-collection to delivery to the laboratory.

Hospital inventory

From surgical instruments and wheelchairs to medication and wound dressings, a large volume of materials is required to support daily operations in a hospital environment. With a mobile computer in hand with bar code scanning or a mobile RFID reader on a cart, healthcare professionals can take highly accurate inventories in just a fraction of the time. The increase in productivity frees time for more crucial tasks that are directly related to patient care. And the ability to take inventory more frequently provides the real-time visibility required to reduce stocking levels. As a result, inventory carrying costs, required storage space and out-of-stocks are reduced and inventory can be located quickly and easily.

Asset management, inspections and maintenance

Medical equipment is always moving throughout the hospital, making timely inspections and maintenance as well as tracking a challenge.

And in an environment where life-threatening emergencies are a daily occurrence, the ability to locate equipment when it is needed is crucial.

When RFID tags are placed on equipment, RFID readers located throughout the hospital automatically note the location of equipment as it moves, providing real-time visibility into the whereabouts of each and every piece of tagged hospital equipment.

The ability to wirelessly track assets ensures the timely and efficient maintenance required to protect patient safety and comply with JCAHO regulations. When biomedical engineers arrive, a quick scan of the RFID ensures they have located the right piece of equipment. In addition, there is no longer a need for engineers to locate paper files with maintenance history and manuals with maintenance and repair routines, since that information is available electronically with the press of a few buttons. The same number of workers can complete more maintenance work orders daily, streamlining the asset maintenance function and improving productivity.

Medical rounds

With paper-based procedures, patient rounds are scheduled manually and test results must be located before rounding begins. But with a mobile computing device in hand, information that is required to conduct rounds is available at the press of a button — from schedules to test results, patient history and more. Physicians have all the information needed to quickly and accurately assess patients. The electronic schedule can be easily adjusted in real time to ensure proper prioritization based on real-time changes in patient condition. Tests and medication can be ordered in real time, improving the speed of care. And items can be scanned at bedside as they are distributed and consumed — from bandages to crutches — helping provide the real-time inventory visibility required to ensure supplies are always ordered on time — and available when needed.

Transfusion verification

The long paper trail involved in managing, tracking and verifying blood slated for transfusion can be fraught with many errors. With mobility, all paper-and-pen processes associated with tracking blood are eliminated. The scan of the bar code or RFID tag on blood products enables easy, highly accurate and cost-effective tracking from the moment the blood is drawn to the moment it is administered to a patient in need. Stocking is more accurate, ensuring the right blood is always available at the time of need.

Real-time inventory visibility ensures that staff can see product that is closest to expiring, allowing more timely dispensing of blood products and protecting against costly waste. And at patient bedside, the ability to scan the patient wristband and transfusion bag ensures patients receive the right blood — before the transfusion begins.

Applications on base

Mobility can help improve the quality of medical care on military bases by enabling:

- **Roaming sick calls.** Since sick call in aid stations is typically available only during certain times, work hours and physical location on base may prevent some personnel from receiving timely care in the event of illness. A mobile device enables roaming sick calls, allowing healthcare providers to travel to patients at any time of the day or night, complete with the ability to access and update medical records in real time. As a result, service levels are improved — personnel can get the care they need, when they need it.

- **Post deployment health assessments (PDHAs).** A mobile computer can allow rapid and accurate completion of electronic PDHA forms at the end of rotations. The electronic information can be posted in real time in a soldier's permanent electronic medical record (EMR), ensuring the rapid referrals required to ease post-deployment health-related issues.

- **Real-time medication inventory visibility.** With mobility, healthcare providers can view only those medications that are presently in stock, eliminating the need to search through thousands of medications that may or may not be available. Medication orders can be processed more rapidly, improving healthcare provider productivity. Soldiers no longer inadvertently receive prescriptions for medications that are not available. And inventories can be updated the minute a prescription is issued, improving inventory management and ensuring that the right medications are in stock and available when needed. The result is better care — and more efficient medication tracking.

Applications in theatre

Mobility allows armed forces to provide more information than a medic could ever hope to carry, all in a single handheld device, leaving more room in the backpack for more medical supplies.

For example, Motorola's handheld mobile computers offer the storage capacity required to pre-load a wealth of data onto the device itself, such as detailed information on medical procedures. Access to this detailed knowledgebase out in the field ensures proper care despite varying levels of experience, improving the quality of care and reducing the duress of daily life in theatre.

If a wireless connection is available in theatre, medics could access a soldier's medical record to check allergies and existing medical conditions before administering care, preventing errors that could further endanger a soldier's life. Medics could also collect and transmit patient vital signs with a digital photo of a wound to obtain expert guidance on the best course of care from a physician back at the base. And while enroute to the base hospital, medics can transmit updated information on patient condition and arrival time. The operating room can be prepared and waiting along with the right surgeon, materials and medications, ensuring soldiers receive the very best of care from the moment they arrive.

Motorola: the right choice for your point of care mobility solutions

When it comes to mobility, Motorola delivers the dependable real-time connections needed to support the critical environment of healthcare. As an industry leader, we offer the proven expertise and technology you need to achieve maximum value and a fast return on your mobility investment.

Our mobile devices are built to meet the needs of government agencies. FIPS 140-2 certification and support for Common Access Cards (CACs) enable authentication to highly secure Department of Defense (DOD) networks for secure one-to-one network access. Rugged specifications ensure dependable operation in the most demanding environments inside and outside the four walls. Our robust channel partners provide best-in-class applications and peripherals such as mobile printers. Our management solutions provide granular and centralized control over your mobile computers and the applications and data resident on those computers, simplifying and reducing the cost of your mobility solution. And a complete range of pre-and post-deployment services will help you get and keep your mobility solution up and running, and at peak performance…every day of the year.

For more information on Motorola's point of care solutions, visit motorola.com/healthcaremobility

Photo Courtesy of U.S. Army; Photographer Sgt. Matthew C. Cooley, 15th Sustainment Brigade Public Affairs

Mobility at work in healthcare

Healthcare facilities around the world utilize our comprehensive portfolio of wireless solutions to improve the accuracy and efficiency of every day tasks, track medical information and equipment and increase the quality of patient care. Our healthcare mobility portfolio includes:

Mobile Computers

Whether you need rugged enterprise class PDA style mobile computers, single and dual-mode Voice-over-WLAN phones or other data capture devices, our portfolio offers the features required for use in federal government healthcare applications — from FIPS 140-2 certification (certain models) to the ability to withstand the frequent device wipe downs necessary to protect the health and safety of both patients and healthcare providers.

Radio Frequency Identification (RFID)

RFID infrastructure enables complete automation of asset tracking. Fixed RFID readers at entry and other key points enable the automatic capture of information on RFID tags. As a result, assets such as monitors, IV pumps or a specialized piece of equipment for an upcoming operation can be tracked in real time.

Bar Code Scanners

Motorola's bar code scanners provide the ability to capture 1D/2D bar codes and direct part marks as well as images that can be attached to a medical record, all with a single device. The need to purchase, manage and maintain multiple devices to accommodate multiple bar code symbologies is eliminated. Since one device does it all, capital and operational costs are reduced — and productivity is increased.

Wireless Network Solutions

Motorola offers the industry's most comprehensive wireless portfolio, capable of delivering the real indoor and outdoor coverage required to reliably and securely extend wireless communications to and from every employee in every inch of your facility. FIPS 140-2 certified, Common Criteria EAL4, PCI and HIPAA compliance combine with our best-in-class AirDefense wireless intrusion prevention system, providing the advanced security required when and where you need it.

Centralized Mobility Management

One of the biggest costs associated with a mobility solution is the ongoing daily management of the wireless infrastructure. Our family of powerful management solutions provide the tight integration required to create a single command center for end-to-end control over virtually every aspect of your mobility solution — from wireless LAN infrastructure to mobile devices and the applications and data resident on those devices. This easy to use comprehensive toolset drives management costs to a new low, delivering the peak performance and maximum uptime required to maximize the total cost of ownership (TCO) for your end-to-end mobility solution.

Mobile applications

Our award-winning channel partners offer deep vertical industry expertise and best-in-class applications that have been tested and validated on Motorola technology. And since our devices are built on a common technology platform, the applications you invest in today can be easily migrated to the Motorola devices of tomorrow. You can easily support changing business needs without the substantial costs associated with new application development — future proofing your solution and providing superior investment protection.

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