MOBILITY IN NURSING

IMPROVING PATIENT SAFETY, CAREGIVER PRODUCTIVITY AND OPERATIONAL EFFICIENCY WITH REAL-TIME, RELIABLE INFORMATION AT THE POINT OF CARE

The power of real-time information in nursing. When they have mobile voice, mobile data and advanced data-capture tools always at their fingertips, your nursing staff can take action wherever they are — no need to travel to a computer, phone or file. Instead, from anywhere in the facility, nurses can: verify medication is about to be administered to the right patient, right at the bedside; monitor medical equipment in patient rooms, such as medication pumps, EKG machines and respirators; receive nurse calls; and even take an accurate inventory of the supply cabinet in just minutes. The result? A more efficient nursing workforce — and improved patient safety.

THE CHALLENGE

So many patients, so much paperwork, too little time

Improving medical care at the point of patient contact is one of the most important goals in the healthcare industry today. In any hospital, the healthcare workers who spend the most time directly caring for patients are nurses. In order to improve care at the patient-nurse connection point, hospitals need to overcome the challenges that plague today's nursing workforce — challenges that increase the opportunity for error at the bedside and reduce the amount of time nurses have to devote to direct patient care, including:

- **Inefficient and error-prone processes.** If real-time access to computer-based systems is not available, information must move manually, leaving room for errors and inserting time into everyday processes.

Nurses are forced to collect and verify handwritten and verbal information. Information on paper forms must be entered into the computer after the patient visit, a double-touch of data that wastes time and invites error. Crucial cross checks at the bedside to verify patient information, lab orders, medication and more are often verbally and visually verified — with no audit trail to prove the required validation took place. And with medication errors in the United States alone affecting 1.5 million patients at an estimated cost of $3.5 billion,[1] reducing errors is a top initiative in virtually every hospital and healthcare institution in the world.

- **Increasing administrative requirements.** New government and industry regulations add to the administrative nursing burden, mandating the collection of additional documentation and further reducing the time available for hands-on patient care.

THE SOLUTION

Seamless real-time voice and data connectivity

When you give your nurses real-time access to the right people and the right information at the point of care, you give them the tools they need to address these challenges and deliver top-quality patient care. With Motorola's Mobile Nursing Portfolio of mobile devices, nurses can complete virtually any task, wherever they are — including patient bedside — as efficiently, effectively and accurately as possible. Designed for patient-facing situations, this portfolio includes:

ALL-IN-ONE VOICE AND DATA-ENABLED MOBILE COMPUTERS

Our handheld mobile computers put the power of a desktop computer, bar code scanner, camera and deskphone in a compact and easy-to-carry device that can do it all. Now, whether your nurses need information from your hospital information system (HIS), a physician or other co-worker, the tools to obtain that information are always in the palms of their hands, never more than the press of a few buttons away. No more traveling to the nursing station to look up information, check patient vitals or make a call. No more filling out forms and entering that information into a computer. No more need to question patients and verify their answers subjectively. Instead, your nurses can:

- Simply scan the patient wristband to objectively confirm positive patient identification (PPID), and to access virtually any patient information at any time — from the patient's medical record to medication and lab orders

- Scan any bar code — including scratched or damaged codes, as well as codes on the curved surfaces of small medication bottles and patient wristbands — to verify that the right patient is about to receive the right care

- Capture and add digital photos to a patient's electronic medical record with the press of a button, to help identify patients and document the healing process

- Make and receive calls — including group push-to-talk calls and calls to other mobile devices on different networks, such as two-way radios

HANDHELD BAR CODE SCANNERS

Are you using computers or workstations on wheels (COWs/WOWs) in your facility for certain procedures? No problem. The cart is already mobile, able to access your healthcare applications. Just add our cordless or corded bar code scanner to the COW/WOW to create a complete mobile data solution that includes automated data capture.

Nurses can now capture bar codes and photos right in a patient's room to improve care and reduce the risk of error at the point of care.

A flexible device portfolio to match the way you work today. If your nurses already have access to data at the bedside with a computer or workstation on wheels (COWs/ WOWs), simply add a wireless bar code scanner to automate and error-proof the capture of critical information at the point of care. The slim profile, combined with the ability to mount the device horizontally or vertically, provides the flexibility to add bar code scanning capability without impacting the work surface.

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Prevent medication errors at the patient bedside. Statistics show that nearly 40 percent of all medication errors occur during medication administration at the bedside — and over half of those errors reach the patient.[2] Whether your nurses carry a Motorola handheld mobile computer or are using a Motorola bar code scanner associated with a COW/WOW, in just seconds, they can scan the bar codes on the patient wristband, the medication and their own badge to instantly verify that the right patient is about to receive the right dose of the right medication, at the right time and in the right way — complete with an audit trail of the administering nurse, as well as the date and time. The result? Errors at the bedside are caught before they reach the patient, improving patient safety and eliminating the high cost of remediation and litigation.

A PORTFOLIO DESIGNED FOR THE POINT OF CARE

Motorola's Mobile Nursing Portfolio is built to serve the needs of patients, nurses and IT:

EASY TO USE.
While our portfolio is packed with the most sophisticated mobile features and functionality, using our mobile devices is second nature, keeping healthcare workers focused on the task at hand — not the technology.

EASY TO DISINFECT.
This family of devices can be disinfected after every patient interaction — without damaging the housing or the sensitive internal electronics.

RELIABILITY YOUR NURSES CAN COUNT ON.
Once you migrate from paper to real-time processes, you need to know that the mobile devices you put in the hands of your nurses will keep on working, despite around-the-clock use. To ensure that level of dependability, our devices are subjected to a series of tests that set the standard in durability testing. Unlike consumer-style devices, our mobile portfolio is built to withstand routine drops, spills, bumps and constant disinfecting throughout the shift. And in the event a device requires repair, you can count on Motorola to minimize downtime and cost. Our unique, optional, comprehensive service plans offer coverage for normal wear and tear and accidental damage, as well as overnight replacement of out-of-service devices.

EASY TO MANAGE.
Motorola's management solutions drive down one of the biggest costs associated with any mobility solution —the day-to-day management of your devices. We give your IT department unprecedented centralized control over your entire mobile nursing solution — Motorola and non-Motorola devices and their peripherals. Thousands of devices can be staged for use right out of the box — including dynamic information such as user name and password. Policies can be set that keep your devices updated with the right firmware, settings and applications. IT can proactively spot and address issues before they impact your users, through the ability to monitor practically any metric related to your devices. And when users have a problem, IT can even remotely control the device to rapidly identify and resolve issues.

EASY TO SECURE.
Keeping patient data private is not only a courtesy — in many countries it's a government mandate. The Motorola Mobility Suite allows you to layer multiple device-level security features on our mobile computers to keep the data resident on the device, as well as in transit to and from the device, safe. Deploy many of the same security capabilities that protect your networks on your Motorola mobile computers, including a firewall, intrusion prevention, mandatory authentication, data encryption, and even a Virtual Private Network (VPN) for government-grade security. And for complete peace of mind, lost or stolen devices can be locked and wiped.

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THE MOBILE NURSE IN ACTION

Mobility empowers your nurses to take action at any time, providing the efficiency improvements that help address the nursing shortage as well as the error-proofing required to improve safety and quality of care at the point of care.

MEDICATION / TRANSFUSION ADMINISTRATION

Whether your nurses are administering oral medications or IV transfusions, a quick scan of the bar code on a patient's wristband and the medication or solution instantly verifies that the right patient is about to receive the right dose of the right medication, at the right time and in the right way. Deadly errors become preventable, protecting patient safety and reducing risk — and the associated liability. A quick scan of the nurse's own badge completes the audit trail. Now, who administered what medication, to which patient at what time, is instantly and automatically entered into the patient's electronic medical record. You can comply with government mandates to record all medication events, without requiring additional paperwork or time. And since the medication events are recorded in real time, information is no longer trapped on paper and invisible until it is entered into the computer, eliminating the risk of a patient receiving a double dose during a shift change.

SPECIMEN COLLECTION

Real-time information access strips wasted time and errors out of the specimen collection process. With the scan of the bar codes on the patient wristband and the specimen container, nurses or lab technicians can access the electronic specimen collection order to ensure the right specimen is about to be collected from the right patient, in the right way, at the right time and placed in the right container. With faster and more accurate data collection at the point of specimen collection, the right patient receives the right diagnosis as quickly as possible, with faster response times and more rapid decision making that improves the quality of care.

PATIENT ROUNDS

No matter what type of data nurses need to capture during patient rounds, they can enter it directly into the electronic patient record in real time — no paper required. The keypad on a mobile computer allows nurses to enter vital signs and other notes into the patient record. Bar code scanning enables nurses to instantly record medication administration and other events. The clipboard at the bottom of the bed is eliminated along with the errors that can occur due to illegible handwriting. And since up-to-the-minute information is always visible in the patient record, shift change errors are eliminated —

nurses no longer risk disturbing a patient to retake vital signs that were just collected, or administering a wrongful second dose of medication.

PATIENT MONITORING

A wireless connection to the vital medical equipment that is keeping a patient stable allows nurses to constantly monitor patient vital signs and equipment status as they move through the hospital unit, tending to other patients. No longer do nurses need to return periodically to the patient room or the nursing station to monitor EKG machines, respirators and medication pumps. Nurses can even adjust equipment if needed, from wherever they happen to be. If a heart rate or blood pressure drops, or another potentially life-threatening situation arises, an instant alarm can be sent to all the nurses on the floor, ensuring a near-instant response to an incident. And since nurses can see the stream of real-time waveforms — such as an EKG — they can instantly determine whether the event is truly an emergency or is the result of a sensor that was accidentally disconnected. The result: improved caregiver productivity and efficiency, without compromising the quality of care.

NURSE CALL PRIVACY

Mobile nurse call establishes a direct lifeline between each patient and their assigned nurse. Nurses can continue to move throughout the facility, yet remain attentive to patient needs. Handset and headset modes support private communications, preventing nurses from inadvertently revealing confidential patient information, protecting HIPAA compliance. And since the need for overhead paging systems is eliminated, the environment is much quieter, more restful for patients and less disruptive for nurses and other hospital staff.

SCHEDULE MANAGEMENT

In the dynamic environment of healthcare, schedules are always changing. A nurse may call in sick, requiring the rapid identification of a replacement for the shift. Patient tests are scheduled throughout the shift with varying levels of urgency. And operating room schedules may change — incoming emergencies take priority over routine surgeries.

With a mobile computer in hand, nurses can double check their own schedules as well as verify test and surgery

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times before transporting patients. And a notification email can proactively alert healthcare workers when schedules change. The result? Patients are transported at the right time for their procedures, preventing unnecessarily long wait times that protect healthcare worker productivity as well as the patient experience.

PATIENT TRACKING

As nurses move patients from one place to another — from the patient room to the lab or operating room — a quick scan of the patient wristband and the nurse's own badge allows the hospital to see where patients are at all times, and which caregiver is with them. The nurse also verifies that she is transporting the right patient to the right place, providing an added layer of safety that protects patients from receiving unnecessary tests or the wrong surgery.

CHARGE CAPTURE

When nurses scan consumables as they are utilized, the items are instantly and accurately captured and associated with that patient. All appropriate charges are allocated to the right patient invoice, ensuring the proper pass-through of patient-related charges and protecting the financial health of the hospital. And since the items are deducted from inventory in real time, there is a side benefit. Stockroom associates can remotely monitor the inventory in the supply cabinet on each floor and automatically refill as needed, while administrators can place timely orders that prevent out of stocks in the main hospital storeroom.

ENRICHED PATIENT IDENTIFICATION INFORMATION

Photographic documentation may be a new form of data for many hospitals — but its value cannot be overstated. If an unconscious patient is admitted into the emergency room, the attending nurse can snap a photo of the patient's face and other indisputable identifying marks, such as scars, birthmarks or tattoos. The photographic information helps prevent mistaken identity — helping ensure that unconscious trauma patients receive the right medication, tests and surgical procedures. In addition, patient wounds, such as bedsores, can be documented to help minimize risk and improve reimbursement for hospitals, rehabilitation centers and elderly care facilities.

MOBILE VOICE

When you give your nurses a mobile computer that offers mobile voice as well as data, your nurses have a single device that not only provides all the data they need, but

also allows them to reach and be reached by anyone inside or outside of the hospital. The powerful private and walkie-talkie, group-style voice communications allow the lightning-fast response times that save lives and improve the patient experience.

With Voice over WLAN (VoWLAN) support, nurses can use your wireless LAN to cost-effectively place a private call to anyone inside or outside the hospital — from administrators with VoWLAN phones, to physicians and other workers with cell phones or Motorola mobile computers. The ability to extend the features, functionality and even the extension of the deskphone to the Motorola mobile computer provides nurses with the equivalent of a mobile deskphone in their pocket. And Motorola's Integrated Voice Solutions enable push-to-talk, instant communications via the WLAN with all these devices, as well as the two-way radios carried by custodial, patient transport and cleaning staff and ambulance EMTs — despite the fact that they run on completely different networks.

A WORLD OF RESEARCH AT THEIR FINGERTIPS

With access to the Internet and any hospital Intranet, doctors and nurses can research any question, right on the spot. For example, nurses can double check potential interactions for multiple drugs, research a potential drug side effect and look up medication recalls and safety alerts.

Accurate charge capture protects profitability. Nurses can scan items as they are utilized at patient bedside, ensuring that patient charges are accurately captured and passed through to the right patient. Costs for consumable patient-related supplies are always re-couped. And since inventory is visible in real time, re-orders can be placed in time to prevent out of stocks.

BENEFITS FOR NURSES, PATIENTS AND THE HOSPITAL BUDGET

The benefits of the mobile nurse reach beyond your nursing workforce to touch your patients and your everyday costs, allowing you to:

IMPROVE PATIENT SAFETY

When nurses can automatically capture data and perform instant, highly accurate double and triple checks in seconds, errors are eliminated, saving lives, reducing error-related injuries — and the associated litigation costs.

IMPROVE PRODUCTIVITY — GAIN TWO TO SIX HOURS PER WEEK PER NURSE

The process automation and elimination of paperwork provide nurses with more time each day to devote to their primary responsibility — direct patient care. And according to Motorola's Healthcare Mobility Market Barometer Study, 56 percent of the nurses and doctors who participated reported that the use of an integrated voice and data mobile device saved approximately 25 to 75 minutes per day — an effective gain of roughly two to six extra hours per week.[3] With more time for patient care and error-proofed, automated data collection in place, nurses are more satisfied with their jobs and their confidence is boosted, reducing turnover and the associated training costs.

DELIVER FASTER, HIGHER QUALITY CARE AND A BETTER PATIENT EXPERIENCE

Medication and lab orders can be placed in real time, and results also viewed in real time. Since cycle times are reduced, patients receive their diagnosis — and proper treatment — faster.

ACHIEVE COST-EFFECTIVE COMPLIANCE WITH THE REGULATIONS OF TODAY AND TOMORROW

Regulations in the healthcare world are changing and increasing every year, forcing hospitals to figure out how to comply within the required timeframe. But the mobile nurse is equipped to rapidly and accurately capture documentation via a bar code scan, the entry of information on the keypad, or even the electronic capture of a patient identification, such as a driver's license or insurance card. As a result, not only does mobility allow you to comply with regulations now, it also provides the future-proofing to ensure cost-effective compliance with the regulations of tomorrow.

REDUCE THE COST OF MOBILITY

Motorola's mobile computers can take the place of up to six different devices — a deskphone, desktop or laptop computer, bar code scanner, camera, pager and walkie-talkie — so there are fewer devices to purchase and manage. In addition, there are also fewer peripherals to purchase and manage — for example, you only need one charger instead of six. Unlike desktop computers, mobile devices do not require the costly installation of network cables and power outlets. And Motorola's mobility management solutions enable your IT department to manage your mobile devices and their peripherals from a single centralized and remote location, greatly reducing one of the largest costs associated with any mobility solution — annual support costs.

For more information on how you can empower your nursing workforce to improve patient safety, the quality of care and their own efficiency with Motorola's Mobile Nursing Portfolio, please visit www.motorola.com/healthcare, www.motorola.com/enterprisemobility/contactus or contact your local Motorola authorized partner.

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THE MOTOROLA MOBILE NURSING PORTFOLIO

	MC40-HC Mobile Computer	MC55A0-HC Rugged Mobile Computer	MC75A0-HC Rugged Mobile Computer	DS6878-HC Cordless Handheld 2D Imager	DS6707-HC Corded Handheld 2D Imager
	www.motorolasolutions.com/mc40hc	www.motorolasolutions.com/mc55a0hc	www.motorolasolutions.com/mc75a0hc	www.motorolasolutions.com/ds6878	www.motorolasolutions.com/ds6707
	Touch screen, Android-powered mobile computer to support clinical applications and communications, in patient-facing colors	All-in-one, compact, high-power platform for desktop-like application performance and comprehensive mobile voice and data, in patient-facing colors	All-in-one, high-power platform for desktop-like application performance and comprehensive mobile voice and data, in patient-facing colors	Bluetooth cordless scanner in patient-facing colors for easy integration with Bluetooth-enabled COWs/WOWs	Corded scanner in patient-facing colors can be integrated with COWs/WOWs

USAGE

Patient room — complete 'in-the-pocket' mobile solution	●	●	●		
COW/WOW integration				●	●

DURABILITY

Drop specification	4 ft./1.2 m	6 ft./1.8 m	6 ft./1.8 m	6 ft./1.8 m	6 ft./1.8 m
Tumble specification	250 1.6 ft/0.5 m tumbles (equivalent to 2,000 hits) per IEC tumble specifications	1000 1.6 ft./0.5 m tumbles (equivalent to 2,000 hits) per IEC tumble specifications	1000 1.6 ft./0.5 m tumbles (equivalent to 2,000 hits) per IEC tumble specifications	N/A	N/A
Sealing	IP54	IP64	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	8MP camera	3.2 MP camera to capture bar codes, photos, videos, signatures and documents		Photos, signatures and documents	Photos, signatures and documents

WIRELESS CONNECTIVITY

Wireless networks	Wi-Fi 802.11 a/b/g/n; Bluetooth	Wi-Fi 802.11a/b/g for easy integration with virtually any wireless LAN, plus the ability to utilize 802.11a to isolate voice traffic and protect voice quality; Bluetooth	Wi-Fi 802.11a/b/g for easy integration with virtually any wireless LAN, plus the ability to utilize 802.11a to isolate voice traffic and protect voice quality; Bluetooth	Bluetooth	N/A – corded – for connection to non-Bluetooth-enabled devices

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

	• PTT client included • Android OS fortified for the healthcare environment with Extensions from Motorola Solutions • Superior voice collaboration — communicate with different types of devices on different networks, including Motorola's two-way radios • Sensing technology maximizes battery shift times (conserves power automatically when not in use) and screen real estate (dynamic screen rotation)	• Native FIPS 140-2 Level 1 certification for easy HIPAA compliance • Additional rugged specifications: patented Monocoque housing improves structural stability; patented industrial grade connector improves durability of the accessory interface; magnesium casing improves shock absorption for sensitive internal electronics; improved construction prevents damage to display • Superior voice collaboration — communicate with different types of devices on different networks, including Motorola's two-way radios • Sensing technology maximizes battery shift times (conserves power automatically when not in use) and screen real estate (dynamic screen rotation)	• Native FIPS 140-2 Level 1 certification for easy HIPAA compliance • Superior voice collaboration — communicate with different types of devices on different networks, including Motorola's two-way radios • Sensing technology maximizes battery shift times (conserves power automatically when not in use) and screen real estate (dynamic screen rotation)	• Available native FIPS 140-2 certification for scanner and cradle for easy HIPAA compliance (available Q1 2011) • Compact cradle — horizontal and vertical mounting provide the flexibility to install out of the way of the work surface, but always in reach	• Optional Intellistand for presentation scanning • Multiple on-board interfaces for easy integration with host computer

1. Institute of Medicine, Report Brief July 2006, Preventing Medication Errors

2. Source: Leape LL et al. JAMA: 1995: 274:35-43 [Excerpted from: Janice Dunsavage, Pinnacle Health, BCMA
2008 Workshop, ASHP 12/8/08 as it appeared in The EHRStarts with Positive Patient ID—Critical Success
Factors in BCMA Implementation; Mike Wisz

3. Healthcare Mobility Market Barometer; Motorola, 2008

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