

## *Sample Blogs*

### **Avoid Workflow Blisters**

You'll likely agree that fit and comfort are two important considerations when it comes to the sensible clogs that so many of us choose for traversing long hospital hallways and standing hours at a time. I also feel that the same should be true for the technology that supports our professional workflow, which is so central to the functioning of every department. Before introducing new medical technology, it's a good idea for everyone involved in the project to walk a mile in the clinician's shoes. Just like footwear, one size does not fit all.

In a low acuity care environment, for example, some note taking, key strokes and a few extra mouse clicks to validate data may be fine. But, in the ICU, when a nurse needs to calm an anxious patient, those clicks can pinch your time pretty hard—like a pair of ill-fitting shoes.

Medical Device Integration (MDI) is case in point.

Across the hospital, physicians, nurses and techs are all heavily dependent on the patient data being captured by advanced medical devices. MDI solutions automate the data acquisition directly from equipment and save precious staff hours. The data is sent over the hospital network right to the electronic medical record (EMR).

The trick is to implement a MDI solution that interfaces care-givers with technology in optimal ways to increase productivity, eliminate time wasted on manual charting, reduce possible charting errors, and to enhance the existing workflows specific to each setting--whether the OR, med-surg or ICU. Otherwise, clinicians may develop painful workflow blisters!

Enabling this requires a thorough understanding of specific clinical workflow needs and caregiver responsibilities in each department. It also calls for a flexible MDI solution that can adapt to the demands of each facility, caregiver and care environment.

One example that comes to mind is MDI in the OR, where running software on a PC works efficiently. Here, devices are static, and because the application is already at the bedside, visual display is not required. In low acuity care environments, such as med-surg, data is typically collected periodically through mobile MDI technology. In a critical setting, such as the ICU, data is collected continuously and often caregivers need a visual and interactive display for patient care...

**Has your department ever introduced a new solution that fits like a favorite pair of Crocs, or has it been shoe-horned into a set-up that just seems wrong? We'd like to hear from you.**

## Chart Smart: Rebooting Bedside Care

Some of the most important patient data stored as a result of a medical device integration (MDI) isn't archived in an electronic medical record (EMR) system. It's saved inside the nurse's head - patient nicknames, favorite TV shows or preferred foods. When nurses spend less time charting and more quality time with patients, there's often more room to remember details and focus on those that truly personalize care.

Of course, we all love to talk about the importance of quality patient interaction. The literature shows that empathetic, caring doctor-patient interaction can contribute to better patient compliance and positive outcomes. Unfortunately the all-too-familiar problem in today's fast-paced healthcare environment is the struggle to deliver the highest level of care in the shortest timeframe. Nurses often have to make hard choices.

MDI frees nurses from the time-consuming task of [manual vital sign documentation](#) on paper charts and duplication of this data in an EMR. That extra time can be spent connecting more personally with patients.

Another recent charting alternative has been for nurses to trade in their pens and paper for computers, tablets, and smart phones at the point-of-care. But, these can disrupt patient interaction and potentially distract nurses from crucial care-giving responsibilities.

Even in an outpatient setting, computer-related tasks often disrupt the caregiver-patient rapport. One well-known physician, author and New York Times medical columnist notes, ["I have often found that I make the best connection with my patient during the physical exam because suddenly there is not a computer between us."](#)

Today, this digital disruption at the point-of-care can be part of the past. With MDI, information can flow seamlessly from the vital signs monitor to the EMR through a network connection, almost completely eliminating the need for clinicians to interact with digital devices.

Note-taking and keyboarding are not the reasons caregivers choose a healthcare career. One less burdensome task and a little extra breathing room can help us focus more on patient care—what inspired us to go into medicine to begin with. That's a very valuable way to leverage today's advanced technology.

**What are some ways you remember personal data about patients?**

## *Leveraging the Full Value of Device Data*

### **Connect: Coming Together . . . for Better Patient Care**

AONE brings together nursing leadership, new medical research, breaking technologies, care trends and so much more. It provides attendees with an unmatched opportunity to share information, connect and inspire. The result is a vastly expanded perspective on the state of patient care today and its promise for the future.

On another level, as clinicians, we also know that a similar broad view of patient information—particularly information from medical devices--will result in a significantly better perspective on the state of individual patients as we care for them today. It also will help us look ahead and optimize treatment for the future.

Until now, a complete, integrated picture of device data was extremely difficult to obtain. Medical devices typically acquire and display data as isolated information, often in incompatible formats. This makes it difficult to consolidate and view in a larger landscape of meaning.

Recently, Capsule introduced a new paradigm in the viewing of device data with the first Medical Device Integration System (MDIS), which we are proud to display here at AONE. Capsule's new SmartLinx MDIS connects data from an almost limitless range of patient devices—across all vendors and models-- and neutralizes, manages and stores this information as part of an integrated system, rather than as a group of disconnected solutions.

This data may originate in multiple environments—the hospital, long-term care facility, ambulatory clinic and even home. Whatever the source, data automatically flows to a consolidated patient record in a designated healthcare IT system, most often an electronic medical record (EMR).

MDIS device connectivity brings forges other important connections as well. Caregivers can spend more time connecting with patients because SmartLinx frees them from the time-consuming burden of recording data and then re-keying it into an electronic system. Moreover, because clinicians interact with this data through an integrated digital patient record, they have a more connected, global view of the patient's condition.

Similarly, the MDIS itself also relies on a whole system of underlying connections to enable this higher standard of care. SmartLinx connects patients with their bedside devices and accurately associates device data with the appropriate record as it flows to the EMR. A vast library of device drivers helps enable this by connecting device data to the network. Naturally, it takes sophisticated underlying network infrastructure to connect the MDIS to individual devices and move data rapidly and securely to its endpoint.

The future promises to make this integrated picture of device data even easier to acquire and to display to help busy clinicians. Shown as a work in progress at AONE is our new Vitals Plus MDIS component with built-in patient sensors for acquiring bedside data without the attaching any external technology to the system. Who knows what the future will bring? But, at meetings such as AONE, we all have a chance to find out.

***Do any of your hospital's medical devices directly send data to a digital patient record?***

***If you're still manually keying in device data, how would you spend the extra time if this burdensome task just went away?***

## *Leveraging the Full Value of Device Data*

### **Monitor: What's Trending Now?**

Almost everyone is part of it. The new world of social media connects vast numbers of people in every age, professional and ethnic group around the globe. In so doing, it has given rise to another phenomenon—the real-time tracking of trends—social, political, personal and much more. “What’s Trending Now” has become a commonplace headline in numerous traditional and new media outlets, thanks to the easy access to broad social media data. We all seem to have an insatiable appetite for what’s on other people’s minds.

As clinicians, of course, have been tracking patient trends for decades for a more serious purpose, for delivering patient care. We continuously monitor patient status from numerous devices to spot trends that may signal a change in condition, or a life-threatening event. Clearly, a severe rise in patient temperature can signal many things. But when changes across multiple device parameters point in the same direction, we pay attention. With input from such a vast number of devices and systems, monitoring patient data and discerning trends isn’t always easy. A key goal of MDIS is to change this.

Just as social media aggregates posts, Tweets and Instagrams from individuals worldwide, an MDIS solution consolidates data from devices of every stripe across the care-giving spectrum, providing an easier and more robust way to track the patient’s condition. It does this automatically, conveniently for the caregiver and in near real-time.

Device integration facilitates easier tracking of information in other ways as well. By eliminating the extra step of recording bedside data and inputting it into the EMR, it frees clinicians to monitor patient data more consistently. A well designed MDIS should also help nurses by supporting easy and convenient data validations so it does not create bottlenecks in time. Data should flow from all devices quickly and accurately to the EMR for access in a timely fashion. All data parameters should be supported to ensure clinicians obtain the information they need and in the preferred unit of measure.

If similar patient values are obtained from multiple devices, an MDIS must be capable of managing this in some way. Above all, the MDIS should be flexible to enable new equipment to be easily added.

After all, device technology does not stand still, and the systems that support it need to move forward at an equally rapid pace.

***Have you ever been challenged by managing the data from today’s growing number of medical devices?***

***Do you think the addition of tablets and smart phones for patient information communication helps or hurts the situation?***

## *Leveraging the Full Value of Device Data*

### **Analyze: Tune Up the Meaning, Turn Down the Noise**

Today, rapidly expanding technologies have led to unprecedented advances in almost every field. But once in a while, almost everyone wants to turn off their PDA, tune out the pings, beeps and vibrations and just go offline. In the information age, we all have a need to chill and gain perspective.

In technology-laden hospitals, in particular, clinicians are bombarded with enormous amounts of information, particularly patient information. Some of this is vital to immediate care decisions. Some will be useful in the future, and some is frankly irrelevant. Often at times all this information can be too complex and varied to truly absorb and sort through during a busy day spent with multiple patients. Adding to the challenge, clinicians must also consider this data in light of best practice protocols, and perhaps evidence-based treatment guidelines.

As an aggregator of device data, Capsule believes a key role of an MDIS should be to help clinicians sort through information to find the data that will have the greatest impact on patient care—and to find it easily and quickly. Today, when device integration solutions are configured, this already happens to some extent as decisions are made about whether or not to include certain device parameters in the patient record. Currently, data thresholds also are being set to trigger alarms for doctors and nurses when a measurement reaches a level where it calls for patient attention.

In the SmartLinx system, technology is now going beyond this to address data overload with sophisticated algorithms and information from big data analytics—again, to help clinicians wade through this sea of information to focus on what is of greatest value to their patients. One example is Capsule's SmartLinx incorporates an innovative ESP (Early. Surveillance. Predictive.) feature. This technology performs a forward-looking clinical analysis of device data for signs of patient sepsis. When discovered, it automatically reports to caregivers, who can then act on the information.

In the future, MDIS will become even smarter, and likely will look inwardly at its own data and use sophisticated analytic models to recommend treatment changes. Of course, capitalizing on years of training and experience, clinicians will continue to routinely analyze data independently and draw conclusions.

But one thing is certain—in the future, we all will need a little help managing the full extent of information out there. It's reassuring to know that we may not need to tune out completely to clear our heads—with a little technology that helps us tune in to what's most important.

***When it comes to technology, can there be too much of a good thing?***

***How would you feel about smart technology helping you make decisions you have traditionally made yourself?***

## *Leveraging the Full Value of Device Data*

### **Act: Did you Catch Hers?**

Every hospital has them . . . the fearless leaders, the team players, the followers. Some act, interact, or simply react.

Once a physician has prescribed a treatment, how well do all the caregivers involved continue to act as a team? Once again, medical device data can come to the rescue—broad-based continuous patient data provides feedback not only on the impact of care in one isolated area, but on the patient overall. Did an action have unintended or unanticipated consequences beyond the expertise of the ordering physician? That feedback might prompt the doctor to take another action—perhaps make a change in the treatment plan, prescribe an additional medication or confer with another specialist. Better information will not only allow clinicians to act, but to *interact* more and to *react* more quickly when needed.

Some experts leader, believe this is part of a larger problem in modern medicine. According to Atul Gawande, MD, a surgeon and highly regarded healthcare thought leader, in today's age of specialization, patient information has become so fragmented that it causes a disconnect in the delivery of care. He notes that medicine has evolved so that doctors often are trained to operate as “courageous cowboys” on an isolated trail focusing only on their own role in caring for patients. He believes that healthcare will improve when physicians “take a pit crew approach,” involving interaction and teamwork to effectively and efficiently maintain the human body as a well-oiled machine. In this pit crew system, members will act in small ways designed to come together to realize dramatic big picture results. In short, they will think globally and act locally to realize success.

An MDIS solution's presentation of integrated device data can help achieve that goal. Its comprehensive ongoing flow of patient data provides feedback not only on the impact of care in one isolated area, but on the patient overall. Did an action have an unanticipated consequences beyond the expertise of the ordering physician? More precise and timely information will not only allow clinicians to act, but to *interact* more and to *react* with greater positive impact on patient care.

Additionally, by interacting with its fellow IT systems an MDIS itself also helps keep clinicians across the hospital informed about a patient's condition. These other systems might include alarms and alerts, clinical documentation and clinical decision and support. Talking to your neighbors and acting as a team with a global perspective on patient care is a good thing, whether for man, woman or machine.

***Does your hospital department have more chiefs than team players?***

***How do you deal with colleagues who work in isolation and insist on going it alone?***