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# MSP *Industry Alert*™

PROFESSIONAL INFORMATION TRANSFORMING NORTH AMERICAN HEALTHCARE MARKETS™



**From Here to There with Obamacare**



## V12N3

Getting from here to there can be a challenge, unless you have the right perspective. Our Post-Graduate Anesthesia Meeting, Digital Medical Office of the Future, Health Summit West - Conference Reports and 2011 EHR Functionality Matrix of 75 developers and products will provide the perspective you need.

### Feature Articles

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- [03] **Convergence - Intelligent Dictation, Clinical Coding, EHRs & ONC Departures** *By Arthur Gasch*  
With Dr. Blumenthal's departure from the ONC, all of the Federal healthcare mandates and deadlines, do you ever wonder how to get from here to there in time? It can be confusing, but this issue provides some actionable answers based on MSP market research. Read about and track down successful solutions. Don't miss our HIMSS 2011 Preview and the summary of EHR products & functionality.
- [05] **GPS to Enhanced Patient Care of the Future – Holy Name's Continued Journey**  
This NJ hospital is well along the road to achieving the digital hospital of the future status, and we look at the decisions it made to get where it is, and the challenges it faces to achieve fully integrated, digital status.
- [09] **Clinical Documentation Improvement Systems Enhance Record Completeness/Accuracy**  
It's interesting that what starts out being an experiment can quickly become an essential tool. So it was with Clinical Document Improvement (CDI) Expert Systems. Your hospital can enhance documentation accuracy now, before transition to ICD10, and drop some needed new revenues directly to the bottom line. See how.
- [15] **Powerful New Tool Simplifies EHR Selection for CIOs**  
Physicians need to look beyond the limitations of a few EHRs being promoted by the ONC and government approach, or they will miss less expensive, more robust solutions that have been overlooked. The EHR Selector™ an 13th MSP/Andrew EHR Benchmark can help any physician (or EHR Consultant) to do just that.
- [22] **...To Boldly Go... (Or Is It Safe to Go Back In the Water)?** *By Richard Bloss*  
Richard Bloss, our correspondent in the U.K., continues to provide Industry Alert™ readers with insight about what's happening *across the pond*, with a perspective on the European HIMSS activities and other developments. What can we learn from our EU neighbors about what did (and didn't) work there, to inform U.S. healthcare reform & EHR deployment here?
- [24] **Hot Topics in Anesthesia at the Chilly December PGA in NYC**  
Three new gas machines, hot competition on cerebral oximetry, the Sedline acquisition by Masimo (and new rumors of a Masimo acquisition by GE), new products from Maquet, Nonin and others, plus ongoing concerns about the safety surgery in MD offices and more – heated up this chilly December in NYC setting.
- [27] **Vendor Short Takes & HIMSS 2011 Preview**  
Tune into latest product announcements from 30 medical suppliers, many of which you can see at HIMSS 2011. These are the technologies that can empower change in your organizations. Don't miss them.
- [31] **Christian Faith & Healing - My Story**  
How prayer and anointing affected healing of dual, upper arm fracture to fully restore range of motion without surgical or any other human intervention.

## Convergence – Intelligent Dictation, Clinical Coding, EHRs & ONC Departures

By Arthur Gasch



HIMSS 2011 comes with the announcement that Dr. Michael Blumenthal, current National Director (ONC) will be leaving his post to return to Harvard later this spring. This will pave the way for the fourth ONC National Director to be appointed.

The office was first created under the Bush Administration, but never well funded until the Obama Administration dumped \$2 billion dollars into the budget. “Has all this money been well spent?” is a matter to be debated by opposing political parties. Certainly, if ones judges such things by the number of pages of new Federal healthcare regulations that have been issued, it has only cost somewhere around \$200,000 a page so far; but the costs will be coming down as Stage 2 and Stage 3 definitions of the term “meaningful use” (MU) are published by the ONC over the next few years. I’m not sure how that compares to the cost of the DOD or other Federal bureaucracies. In spite of the massive budget, the cooking of the EHR MU regulations has been anything but fast. It took 17 months and how many thousands of pages, to clarify MU Stage 1; not to mention ACO, Medical Home and other related bills. The regs have had a profound effect on employment, particularly at legal firms with healthcare practices, who probably had to hire droves of new para-legals who are still pouring over and abstracting all these regulations. Of course, most unemployed Americans aren’t healthcare lawyers.

Through no fault of Dr. Blumenthal, who we feel has done his best to deal with the massive task Congress handed him, nonetheless, like his two predecessors, the ONC has in many ways slowed the adoption of the EHR in the U.S., rather than accelerated it, contrary to the agency’s charter. The combination of delays and complexity of MU regulations has dramatically slowed adoption, hurt hundreds of EHR developers (whose revenues depended on continuous, steady EHR adoption), causing a lost of EHR developer jobs and products in the U.S. market. Whomever replaces him (short of Superman) will inherit the same bane of being charged with doing more that can be done in a timely fashion, and so is likely to have a short, two-year term as we run up on the 2012 Presidential elections.

What about physicians? Dr. Blumenthal announced the combined sign-up of 62 Regional Extension Centers has been approximately 38,000 physicians, about 62,000 short of the 100,000 target that Congress set. Assuming a one year planning and adoption cycle (stated by the MN REC contract), and another 90 days to achieve “meaningful user” status, unless sign-ups dramatically accelerate in 2011, it is unlike that the government’s EHR adoption goals will be met on time, particularly if incentive payment deadlines are not extended, which Dr. Blumenthal claims won’t occur.

Physicians don’t look at Federal Policy one agency or department at a time, but react to the overall impact it has on them. When EHR “incentives” are coupled with continually threatened CMS Medicare payment cuts, most physicians are mildly irritated to downright angry with Federal healthcare policy; the net impact of which seems more about cutting physician practice income, to pay for the \$2 billion ONC Healthcare regulatory bureaucracy Obama has put in place to change the way physicians practice medicine, than it does with accelerating EHR adoption.

Joe Goedert reported in Health Data Management magazine [January 20, 2011] that *“physicians have dismal expectations for health care reform. Sixty-five percent... believe that quality of care... will deteriorate during the next five years, with only 18 percent expecting improvement. Seventy-four percent fear that pay will decrease in the coming years with only 9 percent thinking pay will rise. Overall, 78 percent... think the Affordable Care Act will have a negative impact on the physician community, and 57 percent feel [it] will negatively affect patients... The survey does not show a lot of support for ... Accountable Care Organizations [either], because 45 percent of physicians don’t know what an ACO is. Only 12 percent are in a discussion to join an ACO.”*

Of course, there isn’t much that any ONC National Director can do about ACO legislation or threatened CMS cuts, these negative provider attitudes simply come with the territory. Good bye and best wishes Dr. Blumenthal and Good Luck to his successor. When will the next ONC National Director be announced? Hopefully soon, as lengthy delays in Stage 2 Meaningful Use could prove even more devastating to the EHR market than Stage 1 MU definition delays already have. From a market perspective, it would be desirable for Stages 2 and 3 MU requirements to be known as soon as possible, so that physicians and EHR developers alike can understand what functions and features must be available at the end game, before they have to purchase an EHR that will get them there. That alone would do much to speed EHR adoption. So would creating a more open competition for all EMR developers, rather than excluding 98 percent of the 600+ EHR products from the market; which was ONC policy under Dr. Blumenthal. This has infuriated hundreds of EHR developers, and the employees they have terminated while EHR sales slumped. Frankly, we find few EHR developers feeling that they aren’t discriminated against by the procurement policies that government-funded organizations have propagated. Hopefully that also will change under the next ONC National Director.

**Markets Are Converging** Market convergences seem to take vendors by surprise. Vendors in one segment continue to elaborate their products and miss opportunities for merging with synergistic companies in other segments. That is happening again with three distinct markets

– the Electronic Health Record (EHR) market, the Clinical Document Improvement (CDI) market and the Intelligent Speech Recognition (ISR) market.

While ISR has been focused on helping transcription companies and services, EHRs have also been embracing speech recognition plus natural language processing to transform unstructured clinician encounter documentation into ICD/CDP structured and coded medical records. These technologies in turn, touch on CDI, particularly in the hospital and physician office segments. Recent acquisitions indicate that some companies understand this, while others are missing the boat. Ingenix, traditionally a large clinical documentation improvement company, recently acquired both EHR companies (like Picis and others) and intelligent speech recognition companies (like A-Life), making the point.

**Intelligent Speech Recognition (ISR)** The ISR market's cutting edge is correctly recognizing dictation (no small trick in itself) and then adding structure (and ICD9 billing codes) to it, based on natural language processing of the clinical context. This has been the goal of Nuance (which has acquired Dragon's and Philips' speech recognition businesses, as well as Language & Computing – a speech intelligence middleware provider). Other companies like A-Life and M\*Modal are also involved, as are transcription companies that want to provide “intelligent” speech recognition to physicians (or in some cases the transcription services with which they contract).

EHR vendors take this to the next level and link it to either front-end or back-end clinical ontologies, like SNOMED-CT. One example is Welford Chart Notes, an office-based EHR that has become a mature SOAP-organized EHR solution for small to mid-sized offices. Another is Medicomp, the developer of the MEDCIN front-end ontology used by more than a dozen EHR products that structure physician documentation. MEDCIN is a competitor of (and adjunct to), the SNOMED-CT backend ontology that the Feds have blessed in the MU (Stage 1) specifications.

**The Clinical Documentation Improvement (CDI) Initiative** The CDI expert systems market's cutting edge is to offer proactive, real-time coding assistance to providers during their patient encounters, in addition to providing assistance to Clinical Documentation Specialists (CDSs) who perform the actual coding of that documentation for billing purposes. CDI is having a growing impact on providers, particularly as the use of EHR products becomes more widespread. No longer will coding be an activity that generally occurs after the patient encounter (or after the patient discharge from the facility). The movement to proactive, physician documentation and coding assistance recognizes the fact that no CDS or coder can code (or get paid for) something that wasn't in the actual

physician documentation, even if it is obvious or documented during a previous patient encounter.

The development of computer-driven Expert Coding Systems is an attempt to master the complexities of ICD9-CM currently, shortly to be ICD10-CM (a system with 18 times as many possible codes than the 17,000+ ICD9 codes it replaces). More codes make it increasingly important not to miss a single codable assertion in the patient record, which can make a \$5K to \$22K difference in the amount of reimbursement the provider will receive for care provided. But the coding must be appropriately documented.

ICD10 coding goes live for every provider in the U.S. on November 1, 2013, after which ICD9 codes become obsolete. The EHR Segment The EHR market struggles to meet the government's 800 page Meaningful User requirements, and to either partner with or assimilate Practice Management System (PMS) providers so that they can offer a single, integrated EHR+PMS solution that automates both the clinical and business aspects of the 100,000 physician practices that the HITECH legislation seeks to automate. The integrated EHR+PMS makes it possible to include improve intelligent clinical documentation coding during the patient encounter.

**ACO Adoption** With deadlines looming for EHR adoption, HIPAA 5010 compliance, transition to ICD10-CM coding (starting in 2013), and the creation of Accountable Care Organizations (ACOs), there is certainly a lot to be done and little time to do it. If ACOs are actually adopted to coordinate care for patients with chronic conditions, it will disrupt many providers across the continuum of care. The problem of getting physicians integrating charting across many facilities becomes a compelling issue. The impact will be the most profound on the smallest physician groups and independent, solo practitioners.

**HIMSS 2011 Showcases What's Available Today** Preview solutions will be on display at the 2011 HIMSS Conference, in Orlando in February, where many of the companies discussed here, will be exhibiting. For readers attending HIMSS 2011, check out the Vendor Short-Takes section, and read the lead articles carefully.

Formulate your questions ahead of time so that when you visit these vendors exhibiting at HIMSS, you can ask key questions and get a sense of how prepared each is to guide your organization into the future, where convergence of these companies and products will be occurring. Also, organize your company visits by booth number, to minimize the miles of walking through the vast, 1,200 plus vendor exhibit spaces. The Orlando Convention center is the second largest in the entire U.S. and a great place to get some exercise, as well as information. Δ

## GPS to Enhanced Patient Care of the Future – Holy Name’s Continued Journey

Successfully moving from today’s healthcare, to the healthcare of tomorrow is the Holy Grail for U.S. hospitals and providers. Along the way one has to cost effectively accommodate electronic Health Information Exchange (HIE) among providers, ICD10 deployment, HIPAA 5010 compliance, adoption of Electronic Health Record (EHR) systems that achieve Meaningful Use, and the transition to Accountable Care Organizations and the Medical Home. Achieving all this is no small endeavor.

This transition calls providers to adopt evidence-based diagnoses and treatment approaches, and automate early detection/treatment of patient status changes that would otherwise lead to ICU readmission and possibly adverse (or even avoidable “never”) events. All of these requirements have been imposed on hospitals by the Obama Administration and Congress in 2009, by passage of the controversial HITECH Act, Patient Protection & Affordable Care Act and other legislation that re-directed the entire U.S. healthcare system onto a socialist path, administered by 80+ new federally-funded organizations. How will hospitals successfully make such massive transitions by the deadlines imposed?



Photos above courtesy of DMR Architects, Hasbrouck Heights, NJ.

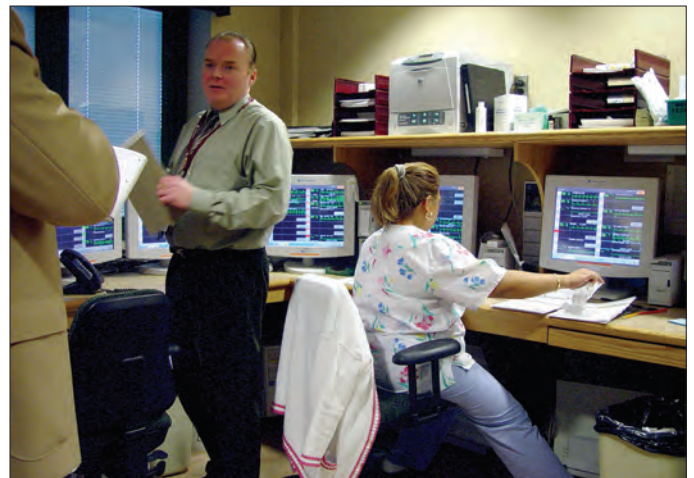
To help answer that question, we looked at an award-winning hospital that thrives on transition – Holy Name Hospital in Teaneck, NJ. Holy Name is a member of the NJ Presbyterian Hospital Association. Looking at the showcase of awards in their lobby (pictured below) underscores that change, led by President Michael Maron, is their prevailing culture; and they do it well. Holy Name has an overall Medicare Quality Index of 98 percent (out of 100 percent), and has scores for Heart Attack care of 100 percent, for Heart Failure care of 100

percent, for Pneumonia care of 98 percent and for surgical services of 97 percent. Holy Name’s mortality rates for Heart Attack and Heart Failure are better than the national average for other hospitals. These scores reflect the commitment to high quality and excellent outcomes that Holy Name routinely achieves. (Reader’s note: You can find data on your hospital on the DROID Hospital Intel database powered by OpenCrowd, Inc.).

Emergency care is a key part of Holy Name’s vision, and the hospital is one of nine hospitals in the NJ Disaster Network that handles incidents of national significance. In 2004, we did an article on Holy Name after it had adopted a Nihon Kohden (NK) centralized patient vital signs surveillance system to solve an Emergency Department (ED) diversion problem. At that time, the hospital’s ED faced frequent patient bottlenecks caused when patients who required surveillance but not ICU care, couldn’t be admitted to a general ward because GWs weren’t monitored. This left patients stuck in the ED with nowhere to go. Holy Name implemented a NK solution that resulted in a reduction of ED diverts from 81 to 12 days/year. The Nihon Kohden system was quickly paid for by increased revenues of about \$8,000 per diverted patient, so the



Trophy & Award Display is Impressive



Centralized NK Monitoring Solution Solved ED Divert Problem



State-of-the-Art, 100-bed Emergency Department Quad and Typical Exam Room

approach achieved a very rapid return-on-investment. (The original article can be found at [www.medsp.com](http://www.medsp.com) under the Resources -> Industry Alert Newsletter menus. Check the V6N4 issue). Holy Name's firsts include:

- First to offer a hospital-based dialysis unit in NJ;
- First NJ hospital to offer a multiple sclerosis unit;
- First to use RhoGAM immune globulin to prevent neonatal problems;
- First to perform hip replacements in NJ;
- First CDC-confirmed case of SARS successfully treated in the US;
- First NJ hospital to offer respiratory gating technology to precisely focus radiation oncology treatment;
- First (and only) U.S. hospital emergency department to win four consecutive Commitment to Excellence

Awards and achieve Number 1 patient satisfaction ranking by the Jackson Organization;

- First Bergen County hospital to offer single-room maternity care units (where labor, delivery and postpartum recovery all occur in the same room);
- First NJ hospital to offer a 100-bed emergency department, designed to handle patients suffering from bioterrorism or chemical attacks (photos above).

Thomas Rose, M.C.C. Coordinator showed us through the Holy Name Command and Control Center for Emergency Response in Bergen County (photos below). The center coordinates emergency response county-wide, and links communication from various police, ambulance, fire-fighters and other emergency responders, including live video feeds.

**Digital Integration** Holy Name has used staff bedside-assessable EHR terminals for more than a decade, a home-grown solution that also provides bedside patient entertainment, educational programs, custom meal selection, and patient Internet and e-mail access. Holy Name has achieved this impressive, hospital-wide EHR integration with a small IT staff of 12 people. *"We are now well along on the task of supporting all of the Stage 1 Meaningful User requirements, and aren't burdened by having a silo of incompatible, legacy IT and patient monitoring solutions scattered around the hospital, which would make the task much more difficult and expensive to achieve,"* commented Michael Skvarenina, Assistant Vice President of Information Systems, who created the system. Skvarenina continued, *"Hospitals that adopted a best-of-breed approach will have a harder time addressing device integration and information flow, and will need a*



Command & Control (Nerve) Center for Emergency Response in Bergen County, NJ at Holy Name Hospital

clever interface engine to accomplish integration. While Holy Name is well on its way to achieving full EHR Stage 1 MU status.”

“In many ways Holy Name is unique because it achieved these things without scrapping its current facility, starting over from scratch, or disrupting patient care as the entire inside of the facility was reworked and transformed. That makes it a model for other hospitals,” said Catherine Yaxley, Vice President of Planning and Government Affairs. She continued, “One of the things that makes Holy Name different is its collaborative culture with staff and administration; it’s part of the Holy Name fabric and the entire staff supports that.”

Today, few hospitals can afford to rebuild and re-equip from scratch, so most can learn from what Holy Name has accomplished. Administrator Michael Maron is quick to point out, “Achieving EHR and the electronic hospital of the future will always be a work-in-progress, a process that never ends.” His vision provides the guidance that keeps the hospital on the shortest course to that destination.

**The Patient Care Perspective** “Being a state-of-the-art provider is not just about technology, it’s fundamentally about achieving outstanding patient care outcomes, constant quality of care improvement, reduction of adverse events and preventing ‘never’ events,” said Sheryl Slonim, Vice President of Patient Care Services. Achieving this involves early recognition of developing problems and early intervention to mitigate them, a proactive, prevention and intervention strategy.

Holy Name started down that path in 2004 to solve its ED diversion



Bedside patient entertainment and access terminal

problem. In the interim, the 5 Million Lives Campaign raised the issue of preventing “Failure-to-Rescue” events. So did the shift to transforming hospitals into totally monitored facilities. There is no place in tomorrow’s hospital for the unmonitored, general ward patient – they will be treated in rehabs or other lower cost-of-care venues. Tomorrow’s hospital will deliver acute monitored and intensive care, offering an enterprise-wide patient monitoring solution. In this approach, patient information must move with the patient to all points-of-care, and be accessible remotely to wherever the caregivers are at the moment a decision is required or an order needs to be changed.

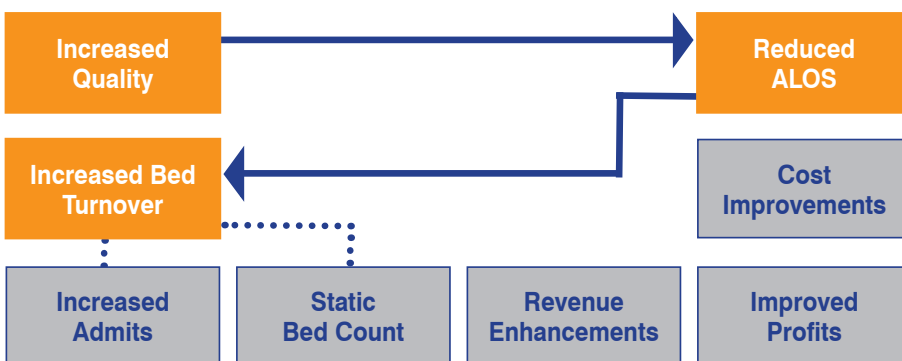
Preventing adverse events, which are no longer reimbursed, is important for any hospital’s financial survival. So is standardizing patient care protocols that reduce failure-to-rescue events by mobilizing rapid response teams

so acute care patients don’t have to be re-admitted to ICUs (which extends their stays and increases hospital costs). Nihon Kohden provided a solution to accomplish that at Vanderbilt University Medical Center (Nashville, TN). Now Holy Name is implementing a similar approach.

**The Prefense™ Early Detection and Notification System™ Solution** A Rapid Response Team assessment or intervention is activated whenever a patient has any of the following events:

- An acute change in heart rate <40 or >130 bpm;
- An acute change in systolic BP <90 mmHg;
- An acute change in respiratory rate <8 or >28/min;
- An acute change in oxygen saturation <90% despite O<sub>2</sub> administration;
- An acute change in a patient’s state of consciousness;
- An acute change in urinary output <50 ml in 4 hours;
- Or when a staff member (nurse, physical therapist, respiratory therapist, physician) “is worried” about a patient.

Based on a recent study grant from the Department of Defense, Holy Name is implementing the same approach that



Improving Care Improves Financial Performance - Source VHA

Vanderbilt did, by installing the Nihon Kohden Prefense Early Detection solution (see center photos). The system supports the Rapid Response team by tracking ECG/HR, SpO<sub>2</sub>, niBP and respiration rate/apnea on every patient on every floor. The trick is doing it without interfering with patient ambulation, a key ingredient in the recovery and healing for most patients. That means that the solution has to be wireless telemetry. To accomplish this, Holy Name chose Nihon Kohden as its wireless monitoring partner, a choice that will immediately add 129 NTX wireless beds at Holy Name.

We asked several staff members, why Nihon Kohden was selected? *“The NK patient-worn, NTX transmitter’s ability to supply noninvasive BP, ECG, SpO<sub>2</sub> and respiration monitoring was needed to conform to IHI guidelines for a rapid response team protocol,”* said Catherine Yaxley who was responsible for getting the DOD study grant. *“If we are able to achieve the same positive results that were achieved at Vanderbilt, we believe this approach will become a de facto standard of care for patients admitted to U.S. hospitals. We definitely think that other hospitals will adopt this approach.”* Ms. Yaxley was enthusiastic about the potential to advance the quality of patient care by using the Prefense™ Early Detection and Notification System™ at Holy Name.

It was the only product that provided all four of the required vital signs (HR, BP, SpO<sub>2</sub> and respiration) in a single, patient-worn telemetry monitor. Being patient worn was important since ambulation is an important part of patient recovery. Philips and GE were also installed at Holy Name, but neither had a telemetry device equivalent to NK’s NTX, but instead require a portable monitor hung on a bed rail, carried by the patient or attached to an IV pole pushed around by them. Many patients are challenged to even be up and



Nihon Kohden NTX Patient-Worn Transmitter

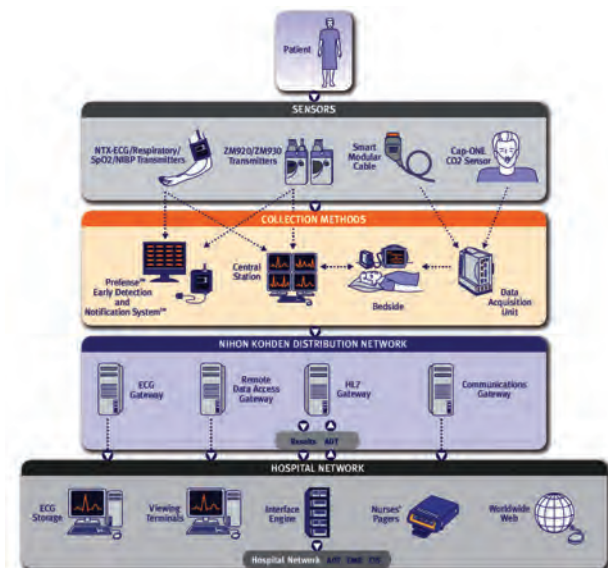
walking and don’t need to focus on pushing around IV poles or carrying patient monitors.

History with Nihon Kohden was also a factor. *“Our experience with Nihon Kohden since 2004 has shown that their five-year warranty and overall low cost of maintenance made cost-of-ownership less expensive than other monitoring companies,”* commented Jim Bischoff, Director of Clinical Engineering. *“The ability to provide remote data access was another very important factor.”* The Nihon Kohden system provides data to various hospital systems through a series of gateways. These also allow messaging and vital signs transmission in near real-time to physicians with remote computers or carrying portable cellular phones, who want to check patients before changing orders.



NK’s Prefense Early Detection & Notification System

Moving data with patients also includes NK’s Data Acquisition Unit (DAU), which is part of the latest TR-6000 bedside patient monitors. This battery-operated unit moves with ICU patients, providing an uninterrupted, continuous log and trend of vital signs, also routed through the NK ECG and NetKconnect Remote Access Gateways to caregivers wherever they are working.



Nihon Kohden’s Enterprise Monitoring Solution

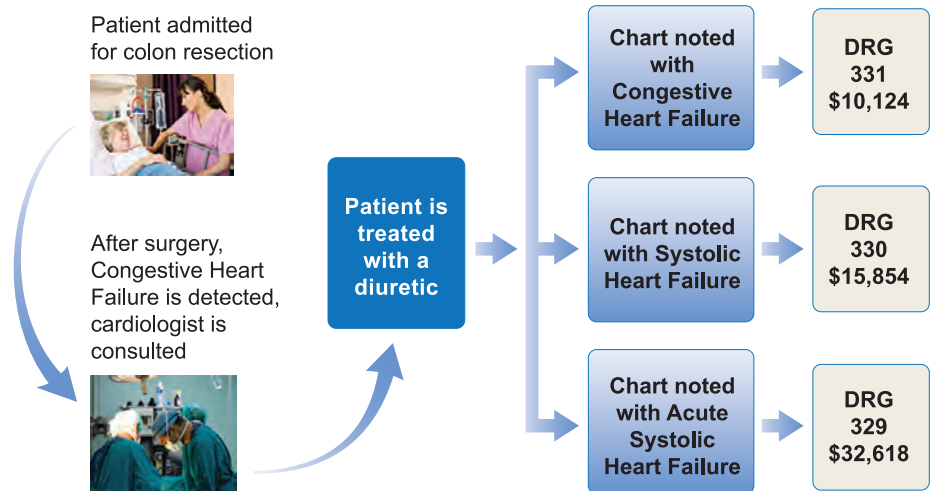
NK’s system uniqueness creates an interesting dilemma for NK’s competitors. If the NTX-based Prefense Early Detection solution becomes a de facto standard of care, other vendors will have trouble competing. Since the hospital’s general ward is the only growth market for U.S. patient monitoring left, this is an important issue. Wide adoption of the NK Prefense Early Detection and Notification System approach seems to push the standard of GW care well beyond simple four-hour spot checks of vital signs, or use of two parameter (ECG and SpO<sub>2</sub>) telemetry devices; rendering such approaches obsolete. Δ

## Clinical Documentation Improvement Systems Enhance Record Completeness/Accuracy

It's interesting how often what starts out being an experiment can quickly become an essential tool. So it was with Clinical Document Improvement (CDI) programs. First came CDI consultants who trained staff on improving progress notations, then came the spreadsheets to track the CDI effort, and now CDI expert system software fulfills those needs and more. This change happened as a result of the need to have permanent clinical data improvement after any consultants left. In order to obtain that, there had to be a way to hold on to consultants' expertise and knowledgebase in the hospital setting.

When a CDI program provides consistent, proper documentation, it makes a huge difference in accuracy, and ultimately in reimbursement for the hospital. Consider a patient who is admitted for an operation on their colon. Prior to surgery it's determined that the patient is exhibiting congestive heart failure, and a cardiologist is consulted. How is this coded to accurately reflect the clinical situation?

If the episode (shown above) is coded for major bowel surgery with CHF only (DRG 331), this specific hospital would recover about \$10,124; but is this really an uncomplicated case? More specific coding would be major bowel surgery with systolic CHF (DRG 330), which is reimbursable for this specific hospital at \$15,854. But if the cardiologist is consulted by the CDS reviewing the case, and clarifies that the patient had ACUTE systolic CHF, it would be correctly coded as DRG 329. That would result in a reimbursement to this hospital of \$32,618, an increase of over \$22,494 from the initial, non-specific coding. Other hospitals would get slightly different amounts depending on where they are located, but the increases for more specific coding would be similar. So it's critical to be thorough in documentation and coding, both for the accuracy of the documentation and for the financial survival of the organization.



The question is, with the wide variety of conditions seen across the hospital setting, the variation in experience levels of Clinical Documentation Specialists (CDS) and coding staff, and the variation in the documentation and notes made by all of the physicians who are managing or consulting on such cases, how do you assure accurate coding for all patients?

Every year coding becomes more challenging. The October 2007 change to MS-DRG coding upped the coding complexity (and reduced the revenues available by 4.8% over three years). CMS reimbursement reductions are scheduled to occur in 2011, although few believe they will be of the scope previously announced.

The transition from ICD9 to ICD10-CM coding, which takes effect October 1, 2013, isn't that far off and will reduce base reimbursements even further, making accurate coding more important than ever. With 17,000+ codes in the ICD9 domain, only a few clinical documentation specialists can pull the best codes that comply with all the rules from memory without consulting coding references. With the U.S. finally switching to ICD10 coding, a domain that is 18 times larger than the current ICD9 coding/procedure domain, no CDS, much less any physician, is going to immediately be an ICD10 coding expert come October 2013.

The typical doctor probably isn't as aware of coding issues as the average CDS. Everyone will need some access in real-time to computerized ICD10 reference sources. Once ICD10 coding arrives, continuing manual, after-discharge review and coding approaches could result in less accurate documentation and billing, which generally leaves reimbursement money on the table. Given the tight cash flow and low margins in healthcare organizations today, those institutions that don't create accurate and complete coding will struggle to survive in the future.

A more efficient, more automated documentation workflow paradigm will be required. That's why an electronic expert-system for CDI has become an essential tool.

All providers have to make the change to ICD10 at the same time, and the closer the deadline gets, the more deployment activity there will be. When should healthcare organizations start to adopt expert CDI systems, so that they are on-line, working and familiar to CDS and coding staff by October 2013?

It's important to start early because the entire market will be trying to comply with the same ICD10 deadline, and CDI developers' training and support resources will be challenged to provide personal service to everyone at the same time, as the deadline draws nearer. Therefore, the earlier you adopt CDI, the

more personal attention you are likely to receive. This also implies that any CDI system you consider should be intuitive and easy-to-learn with readily accessible, on-line help screens to minimize the need for external vendor support.

Any hospital-based CDI program benefits from effective communication and data transfer between the hospital's HIS (or Clinical Data Repository), its ADT system, its labs and pharmacy systems, and its CDI system. How easily and automatically these data transfers occur determines how automated and efficient a CDI program can be, and affects medical record department workflow. Only a few hospitals have achieved highly-integrated interoperability, but more will be working to develop it over the next 4 years. Clearly, the more a hospital has standardized on a single vendor for these systems, the less work will be required to interface to them. Best of breed approaches will require an Interface Engine to facilitate communications.

How can a hospital move from where it is today, to new levels of automation and cost-savings in its CDI program? Let's look at some implementation scenarios, and see what enhancements can be made. One of these situations will probably mirror your own CDI situation, and hopefully provide insight to your growth path and next step(s) to enhancing your solution.

The best approach would be to adopt one CDI product that can support any workflow your hospital is currently performing, and any it may wish to implement in the future; taking into account how the CDI will be impacted when you automate communications between HIS/CDI, ADT, lab and pharmacy systems.

As your hospital transitions to ICD10 you don't want to find yourself with an expensive but obsolete CDI tool that won't accommodate workflow enhancements or the demands of ICD10 chart reviews. You can't afford to change CDI products every time you want to enhance your current

workflow, nor do you want to retrain your CDS and Coding staff to learn a new CDI system.

There are many CDI products on the market, including: Chartwise, 3M, CDIP, Navigant, FTI, Metahealth Technology and several CDI-lite products that CDI consultants leave behind. We think Web-based, Software-as-a-Service (SaaS) approaches best support any level of system communication integration a healthcare provider is looking to achieve, from the simplest approaches up to fully-structured HL7 communication using CDA (or CCR) messaging between HIS, ADT, lab, pharmacy and other systems or even fully-automated, custom interfaces using I.T. vendor application programming interfaces (API).

As an organization moves up the CDI workflow enhancement ladder, workflow is improved by the elimination of some manual data preparation tasks, which simply are automated and disappear. Equally important is choosing a CDI supplier that will survive and thrive. That is likely to be one that leverages a SaaS, Web-based approach. Organizational spending to purchase or enhance CDI products is expected to increase up to the summer of 2013. After these expenditures, it will be a while before hospitals will again invest in CDI, since they will have just acquired their products in the last year or two.

This same phenomenon of premature replacement followed by a few years of less than average sales was seen in 2000 and 2001, after the Y2K spending spree that stretched from mid-1998 through

the end of 1999. Companies offering Web-based solutions (paid for on a monthly subscription fee basis) are the most likely to be minimally affected by such market fluctuations and will remain quick to deploy.

In many hospital settings, coding hasn't traditionally started until after the patient was discharged, long after the documentation was signed off. It isn't until then that the complete medical record is sent to the medical records department, where coders see it. Continuing with this retrospective review and coding approach will guarantee incomplete documentation and reduced reimbursement once ICD10 is implemented. Too many complications and co-morbidities will be missed and the base rates for DRG will be further reduced due to the finer granularity of ICD10 codes.

More recently, clinical documentation specialists have been inserted into the process to query physicians for clarifications while the patient is still in the hospital, before the patient has been discharged. Different hospitals adopt different CDI approaches, which is why a hospital has to choose an approach that is right for their level of automation. That's why looking for a CDI approach you can remain with, and simply fine-tune as you introduce more advanced workflow, is better than having to abandon one vendor that accommodates today's workflow and find a different one for the CDI workflow you want to introduce tomorrow.

- **Documentation Improvement expertise is built into the software**
- **Extensive help screens and built-in training videos assist with bringing new staff up to speed.**
- **Total cost of ownership is predictable; can be forecast, not front-loaded**



Stand-alone Starter CDI Products Offer Modest Benefits

Critical Access Hospitals (CAHs) can participate immediately, by implementing a basic manual paper-based system, or going right to a Web-hosted, SaaS CDI solution. By adopting a Web-based approach, any in-hospital hardware investment (and any significant purchasing costs) are avoided. CDI requires only Web browsers and payment of a monthly software fee, which is offset by the improved revenues the CDI product is generating.

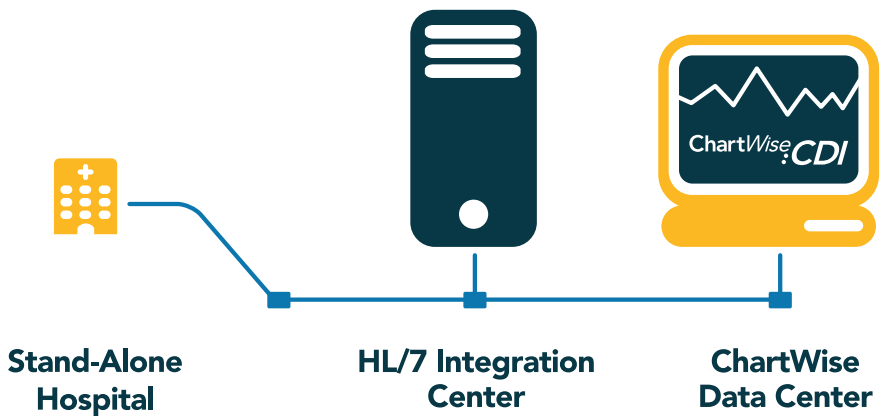
This Web-based, SaaS approach frees up any I.T. resources the hospital has, allowing I.T. personnel to focus on the most immediate 2011 priority, which is the certification and deployment of their own complete (or modular) EHR systems, and the support of attending physician EHR system lab reporting requirements. The latter priority is required so that attending physicians can demonstrate “meaningful use” for their own EHR by October 2011, only 10 months away.

Achieving lab reporting for physician EHR systems is in fact a survival issue for many of the 1,900+ CAHs since they receive up to 60 percent of their revenues from attending physicians’ fees for processing lab tests.

CAHs lack I.T. staff, so a simple Web-based approach to CDI is just right for them. The simplicity of the Web-services (SaaS) approach to CDI keeps it mostly off the I.T. department’s radar screen, and is more likely to get early administrative approval.

In smaller (non-CAH) hospitals looking for greater integration to their HIS, the data transfer could use HL7 messaging of PDF documents, or HL7 messaging of more structured data between their HIS and the remote CDI expert system, as depicted in the diagram above.

Larger, multi-hospital campuses (or smaller Integrated Delivery Networks (IDNs)) can use a community-wide portal approach – which provides secure access to all hospital facilities via one Web portal to the CDI Web services as diagrammed to the right.



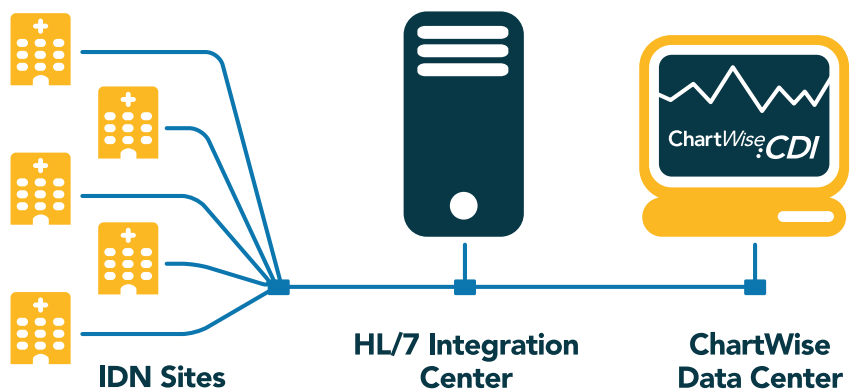
The IDN often has different HIS, ADT, lab, pharmacy and other I.T. systems at different hospitals, which makes data access for CDI a challenge. How do they harmonize the differences in field names and definitions across all their silos of automation? In some larger IDNs, it’s not unusual for there to be a 100 or more different computer systems, particularly if individual hospitals have taken a best-of-breed approach to automation. Each hospital can have a different HIS, ADT and other systems that have some variation in patient-specific field definitions.

Such complexities are handled by introducing a Web-based, SaaS Integration Engine (IE). The data flow is then from each hospital’s particular system (HIS and ADT and so on) over a Virtual Private Network (VPN) to the integration engine site, which harmonizes the field names, types and lengths from the IDN’s systems and passes them on to the CDI. All the data transformations are invisible to CDS, Coders, the Medical Record Department Manager or other personnel, who are

using the CDI Web services. The IE and HL7+structured payload combination is a very powerful approach.

The configurations discussed don’t require hardware to be installed in any hospital or IDN facility, but rather depend upon Web-based assets, deployed in the clouds, as Web services. That avoids hospital site preparation, and site/hardware maintenance expenses; but (VPN) message security and HL7 mapping of the data elements being sent are still required. Messages are then routed through the Mirth IE on the way to the CDI expert engine site.

The use of Expert Systems in medicine isn’t really new, they have been used to match lab results to antibiotics and for other purposes for years. Their use for documentation review is a logical application since ICD10 will have four times as many active codes when it goes live than the ICD9 systems it supplants, and codes will keep growing after it comes online in 2013.



Chartwise is an example of a rules-based Expert System that alerts those reviewing documentation to more specific diagnoses, complications or co-morbidities based on the entered diagnosis, lab values, medications or procedures that are documented. Assistance is available in real-time to CDS and other users. The Chartwise CDI approach described previously supports any/all of these implementation strategies, providing a truly flexibility workflow and growth path that simplifies both training and help-desk support issues across the continuum of care. In dealing with the 17,000 plus ICD9 codes, over 34,000 rules are required. CDI rules are based on medical and coding knowledge and includes synonyms and suggested diagnoses, with an indication of the (percentage) likelihood of each.

A “rule” might suggest to the CDS additional diagnostic clarifications to check for – such as, the presence of a Foley catheter in urinary tract infection cases. If a Foley is being used, its ICD9 code can be added. These checks help anyone using the CDI system to recognize a potential complication or co-morbidity that may be relevant to a patient and should be noted to enhance documentation accuracy.

The CDI prompts the CDS to send clarification queries to attending physicians when documentation elaboration would make the record more accurate or better reflect the patient’s clinical situation. This always results in more accuracy, whether or not it results in

any changes in reimbursement. Having accurate documentation helps reduce insurance rejections and provides strong evidence during any Recovery Audit Contractor (RAC) audits.

Expert CDI applications help in other ways too, such as enhancing management tools available to the Medical Records Department Manager. CDIs track statistics – such as the response rate and so on, for system users. When reviewed on a hospital-wide or IDN-wide basis, these reports provide management oversight, reducing bottlenecks or trouble spots in the documentation and coding process.

So how can you easily compare available CDI products? First, do your homework and get the facts about these products and note them on the Feature Checklist we have provided at the end of the article. It will also help with any discussions with your I.T. department and any CDI candidates.

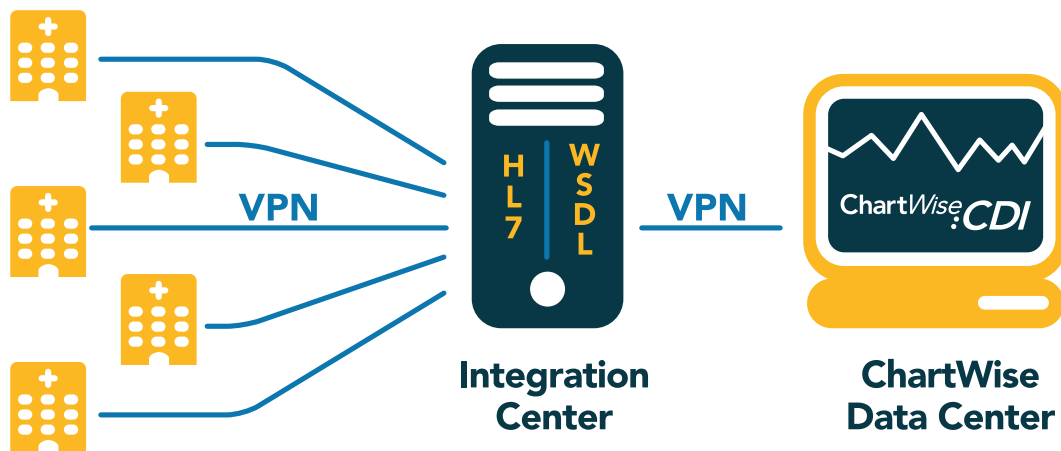
Medical Strategic Planning (MSP) is creating a Website that lists CDI product features and functions, which will allow users to compare products to each other and to the user’s current (or future) needs. A link to this site will be posted at the [www.ehrselector.com](http://www.ehrselector.com) early in 2011. If you are not an Industry Alert™ subscriber, you can still pick up a complementary copy of this V12N3 issue from the literature bins at the HIMSS 2011 conference in Orlando in February. Here are some closing thoughts.

First, avoid using any CDI approach that aggregates patient data onto laptop computer(s). Patient data on laptops is a real security problem in healthcare organizations. Laptop theft has accounted for a large percentage of the total HIPAA violations in all healthcare settings over the last several years.

Second, wherever you store patient information, avoid simplistic security approaches like OS-level bitwise encryption of data on Window’s hard drives. Such encryption only protects data as long as a user can’t log into Windows. There are well-known, Unix-based hacking programs that can determine passwords, or can create a new Windows user, who once logged in, is granted full access to the OS-encrypted data on all hard drives. Better yet, move the CDI solution to the Web and let the ASP worry about data security, authentication and backup. There’s no need to keep the data on computers in your facility with the Web-services approach discussed here.

Third, engage your physicians in proactive CDI use during documentation when possible. In some settings, getting physician buy-in is easier. Physicians working for the VA system use the Vista EMR and the other computer systems (or they leave). Large clinics may mandate physician use of certain computer systems. In other hospitals getting broad-based physician CDI buy-in can be more challenging.

Fourth, hospitals without any CDI program will want to put one in place



quickly, and orient CDS and Coders to using this powerful, Web-service solution well before making the transition to ICD10 coding. Because Web-based CDI deployment requires minimal I.T. resources, it is probably something you can get your CIO to

approve, even if his/her schedule is loaded with EHR deployment, ISO80001 compliance and high priority issues. Once CDI is in place and you have oriented your Medical Record Department personnel, consider an educational program for your interns

and physicians, to help them up the documentation learning curve. More technical physicians may actually take an interest in the CDI approach, but the majority will need some encouragement. Δ

| <b>CDI Features &amp; Functions Matrix</b>                         | <b>Vendor</b> | <b>Importance</b> |
|--|---------------|-------------------|
| <b>User Functionality</b>  |               |                   |
| Single or Multi-user Functionality                                 |               |                   |
| CDS Worksheet  |               |                   |
| Multiple Roles Supported (CDS, Physician, CDS Mgr, CMO, CFO, etc.) |               |                   |
| <b>Query Functionality</b>   |               |                   |
| Electronic Query Templates   |               |                   |
| Query Tracking/Dashboard   |               |                   |
| Query Retrieval for Auditing                                       |               |                   |
| Print Queries for Physician Response                               |               |                   |
| Manual Query Response Input  |               |                   |
| Electronic Capture of Query Response                               |               |                   |
| Submit Electronic Queries for Physician Response                   |               |                   |
| Email Query Notification   |               |                   |
| <b>Expert System and System-Generated Suggestions</b>              |               |                   |
| Full Expert System Capabilities                                    |               |                   |
| Physician Diagnosis Entry  |               |                   |
| POA/HAC Tracking   |               |                   |
| Diagnosis Entry Using Clinical Terms                               |               |                   |
| Procedures Entry Using Clinical Terms                              |               |                   |
| Suggestions Generated from Lab Values                              |               |                   |
| Suggestions Generated from Medications                             |               |                   |
| Signable Physician Attestation Report                              |               |                   |
| <b>DRG and Grouper Functionality</b>                               |               |                   |
| MS DRG Review  |               |                   |
| Medicare Grouper/Pricer  |               |                   |
| APR Grouper/Pricer   |               |                   |
| Additional Groupers Available (AP, etc)                            |               |                   |
| <b>Context-Sensitive DRG &amp; ICD Code Review</b>                 |               |                   |
| CMS Coding Guidelines  |               |                   |
| AHA Coding Clinics (with full text viewing)                        |               |                   |
| RAC Audit Alerts   |               |                   |
| DRG Desk Reference   |               |                   |
| <b>Reporting</b>   |               |                   |
| CDI Impact Report by CDS, Hospital, Division, IDN                  |               |                   |
| Query Activity Report by CDS, Doc, Hospital, Division, IDN         |               |                   |
| Query Reason Report by CDS, Doc, Hospital, Division, IDN           |               |                   |

|   |  |  |
|---|--|--|
| Query Response Rate by CDS, Doc, Hospital, Division, IDN      |  |  |
| DRG Complications Report by CDS, Doc, Hospital, Division, IDN |  |  |
| APR Severity and Mortality Report                             |  |  |
| Case Mix Index Reports by Hospital, IDN                       |  |  |
| CDS Productivity Report                                       |  |  |
| Comprehensive Drill Down/Up in Reports                        |  |  |
| Scoreboard and Dashboards                                     |  |  |
| Interactive Data Exploration (cube analysis)                  |  |  |
| Ad Hoc Query Analysis   |  |  |
| Alerting and Reporting Delivery                               |  |  |
| <b>Interfaces</b>   |  |  |
| Full Functionality w/o Interface (manual data entry)          |  |  |
| Bulk Patient Demographics Uploaded via .csv File              |  |  |
| HL7 Admission-Discharge-Transfer (ADT) Inbound                |  |  |
| “Outbound” (PDF documents sent to HIS)                        |  |  |
| Structured Data To/From HIS via HL7                           |  |  |
| Integration with Commercial HIS API                           |  |  |
| Portal Integration  |  |  |
| <b>Workflow Support</b>                                       |  |  |
| Can Fit Into Existing Workflow                                |  |  |
| Allows Workflow Redesign And Optimization                     |  |  |
| Fully Electronic EMR and Queries                              |  |  |
| Supports Concurrent Coding                                    |  |  |
| Tools for Direct Physician Input (but not required)           |  |  |
| <b>Deployment</b>   |  |  |
| Web-based Deployment from Any Supported Browser               |  |  |
| Industry Standard SQL Server Database                         |  |  |
| No Hardware or Software to Install or Maintain                |  |  |
| No Local Installation of Java or .Net Components              |  |  |
| Software Updates Provided Automatically                       |  |  |
| Rapid Roll-out, Flexible Roll-out Strategies                  |  |  |
| Scales Smoothly and Predictably to Accommodate Growth         |  |  |
| Enterprise-wide Data Collection and Reporting                 |  |  |
| Avoids Risk of Data Loss from Laptop Theft                    |  |  |
| <b>Data Security</b>  |  |  |
| HIPAA Compliant Security                                      |  |  |
| Military-grade Physical Security at the Data Center           |  |  |
| High Level of Redundancy, Clustering, Disaster Recovery       |  |  |
| Database Contents are Fully Encrypted                         |  |  |
| Encrypted Transmissions To/From the Data Center               |  |  |
| Browser Cache Disable (when using Internet Explorer)          |  |  |
| Timed Logoff with Inactivity                                  |  |  |

## Powerful New Tool Simplifies EHR Selection for CIOs

Hospitals are destined to play a crucial role in the adoption of EHR solutions for their attending physicians. For better or worse, the government has thrust hospitals into the center of the physician group practice EHR adoption process. By imposing the requirement that EHR's in physician offices are able to receive electronic lab results from the hospitals where they admit patients, as well as from all national labs to achieve Stage I Meaningful User (MU) status, the ONC has put the CIO in the middle of the group practice EHR process. Soon the forthcoming MU Stage 2 requirements are likely to expand such

interoperability to pharmacy, radiology and other imaging test results requiring exchanges based on DICOM and other standards. This level of interoperability is challenging for many hospitals, particularly Critical Access Hospitals (CAHs) located in rural areas; as well as, larger Integrated Delivery Networks that have diverse I.T. solutions installed across multiple network hospitals.

Two major questions arise. How involved should the hospital CIO be in helping group practices of attending physicians, choose their EHRs? How does the hospital interface any broad cross-section of the 620+ different EHR

vendors that group practices may choose to adopt in their practices?

Answering such questions starts with candid and timely communications between individual practices adopting EHRs and CIOs trying to support interfaces to hospital I.T. infrastructure. And that conversation needs to occur very early in the group practice's EHR evaluation process, particularly for MDs who admit to more than one hospital or healthcare system. In order for physician and hospital CIO to have an intelligent conversation, both need to understand what the other partner's technology



|                                     | Company                               | Product                              |
|-------------------------------------|---------------------------------------|--------------------------------------|
| <input type="checkbox"/>            | ABEL Medical Software Inc.            | ABELMed EHR - EMR / PM V11           |
| <input type="checkbox"/>            | AllMeds Inc.                          | AllMeds EMR                          |
| <input checked="" type="checkbox"/> | Allscripts                            | MyWay                                |
| <input type="checkbox"/>            | Allscripts                            | Enterprise                           |
| <input type="checkbox"/>            | Allscripts                            | Professional                         |
| <input type="checkbox"/>            | Allscripts/Eclipsys                   | Sunrise Ambulatory Care              |
| <input type="checkbox"/>            | American Medical Software             | American Medical Software-EMR v22    |
| <input type="checkbox"/>            | Aprima formerly iMedica               | iMedica Patient Relationship Manager |
| <input type="checkbox"/>            | CHARTCARE, Inc.                       | ChartCare EMR                        |
| <input type="checkbox"/>            | CureMD Corporation                    | CureMD EHR                           |
| <input type="checkbox"/>            | DavLong Business Solutions            | MedInformatix                        |
| <input checked="" type="checkbox"/> | e-MDs                                 | e-MDs Solution Series                |
| <input checked="" type="checkbox"/> | eClinicalWorks LLC                    | eClinicalWorks                       |
| <input type="checkbox"/>            | EncounterPro Healthcare Resources/JMJ | EncounterPRO                         |

platform is going to be, and what the interface alternatives are.

While it might be the dream of all CIOs that they can promote their favored EHR solution to all practices, one which can easily be interfaced to their particular mix of legacy, installed I.T. vendors, it is at best wishful thinking; and if hard sold to physicians, not likely to have the expected results, unless the hospital owns the group practices and the physicians are employees of the hospital – such as in systems like the V.A. or Kaiser.

Various interface engines exist to address such problems in each hospital, and some do a very good job. Community-wide health information exchanges (HIEs) are beginning to emerge as well, and some are offering such services. Such integration that facilitates everyone exchanging data may be the value proposition that RHIOs and HIEs have been searching for.

Group practices that aren't bought out by hospitals, are not going to want to be handcuffed to a limited number of EHR solutions that were picked simply because they were the easiest for the hospital's CIO to interface, or the easiest for their REC to collect back-end (pre-qualification) fees from. Instead, physicians would be wise to choose the EHRs that do the best job of optimizing (or at least not disrupting) their office-wide workflow and meeting their other practice needs; but how can they find these vendors?

That's where companies like MSP can play a significant role. MSP lists over 600 EHR products on its [www.ehrselector.com](http://www.ehrselector.com) Website. Over 30 of these are able to be cross-referenced against 680 physician practice requirements, providing a comprehensive and impartial EHR product functionality brokerage searchable by physicians, EHR Consultants, hospital CIO, and even some REC clients.

Hospital CIOs can use the MSP EHR Selector™ to find EHR solutions that can integrate with hospital I.T. plat-

| Side By Side Vendor Product Comparison Report  |  |   |  |  |
|--|--|---|--|--|
| Features Supported (●=Installed, ●=Available, ●=Yes, ●=No)                           |  |   |  |  |
| Feature Categories   | Compliance   |   |  |  |
| <b>Corporate Info, Contacts &amp; EHR Product Focus</b>                              |  |   |  |  |
| Last Vendor Login  | 9/23/2010 3:12:36 PM   | 1/12/2011 9:18:15 PM                                    | 9/22/2010 1:39:49 PM   |  |
| VEN1: Corporate Name   | Allscripts   | e-MDs   | eClinicalWorks LLC   |  |
| VEN2: EMR Product Name   | MyWay  | e-MDs Solution Series                                   | eClinicalWorks   |  |
| VEN3: Year & Month Current Version released (YY/MM format) [06-19-09] AG             | 10/01  |   |  |  |
| VEN4: Street Address Line 1 [For EHR Group] [06/25/2009] CB                          | 8529 Six Fork Road   | 9900 Spectrum Dr.                                       | 112 Turnpike Road, Suite 200, Westborough, MA 01581                |  |
| VEN5: Street Address Line 2 [06/25/2009] CB  |  |   |  |  |
| VEN6: Street Address Line 3 [06/25/2009] CB  |  |   |  |  |
| VEN7: City [06/25/2009] CB   | Austin   |   |  |  |
| VEN8: State [06/25/2009] CB  | TX   |   |  |  |
| VEN9: Zip Code/Postal Code [06/25/2009] CB   | 78717  |   |  |  |
| VEN10: Website URL   | <a href="http://www.misyshealthcare.com">www.misyshealthcare.com</a> | <a href="http://www.e-mds.com">http://www.e-mds.com</a> | <a href="http://www.eclinicalworks.com">www.eclinicalworks.com</a> |  |
| VEN11: Contact Name for Sales Information Mandatory                                  | Jolie J Rollins  | Mike  | Patty Looney   |  |
| VEN12: Contact Phone for sales information Mandatory                                 | 1-866-647-9787   | DeMuth  | 508 836 2700   |  |
| VEN13: Contact E-mail for sales information (Mandatory)                              | jolie.rollins@misys.com  | mdemuth@e-mds.com                                       | patty@eclinicalworks.com   |  |
| VEN14: Contact Fax for sales information   |  | 512-335-4375  | 508 836 4466   |  |
| VEN15: Total Number of Employees [06-19-09] AG                                       |  | 280   | 1,250  |  |
| VEN16: Corporate Years in Business   | 27   | 14  | 11 years   |  |
| VEN17: Years EMR corporate division has operated [October 19 2010] CB                |  | 13  |  |  |
| VEN18: Year current EMR version first introduced, for example, 2008. [06/19/2009] CB |  | 1999  |  |  |
| VEN19: If company bought the EMR, what was the year? (YYYY) [October 19 2010] CB     |  | n/a   |  |  |

forms, or at least support the same interoperability standards. They can then devise a menu of EHR choices to present to attending physicians working in many different medical specialties. The [www.ehrselector.com](http://www.ehrselector.com) website facilitates the discussion between both parties. It's really quite simple. After logging into the EHR Selector™, the user picks up to 3 EHR products (at a time). See Figure on previous page. Then uses the 'Reports' menu to generates a side-by-side report of their features, like the one shown above.

A more sophisticated approach is to pick a set of features desired and then generate a report of the EHR products that match that feature set. The EHR Selector™ supports 46 practice specialties, so it will work for all major attending physician specialty groups. No one EHR product will satisfy the needs of all 46 specialties, but CIOs can offer groups of EHR products that satisfy the needs of related specialties. For example, you will find several products that support family practice, internal medicine, pediatrics and OB/GYN, another group that support gastroenterology and infectious

diseases, another for adult and pediatric cardiology and so on. In this way all the specialties of all the attending physicians with products are covered by EHRs designed especially to work for their individual practice specialties.

To start a search click on the 'Core Feature Set' Global Profile. In one click you add 62 features to the EHR Selector™ that represent ALL features that all EHR products share in common. You then add the additional features/functions needed by individual practice specialties. It's pretty simple.

In no time the EHR Selector can create various groups of EHR products that meet combinations of practice specialties. Save each group as a User-Defined Profile, and the CIO is ready to have that conversation with their attending physicians. This is not some simplistic analysis either, the MSP EHR Selector™ can drill down to 680 features that EHR products offer. To get here a CIO spends an hour or two and less than \$300.

What if your attending physicians are talking with their local Regional

Extension Center (REC) or are already signed up with them? That too is not problem. The MSP EHR Selector’s ‘REC-Check’ mode lets hospital CIOs input the REC’s pre-qualified EHR vendors, and creates a profile of the features they have in common. Now assert that profile to the EHR Selector™ and see what other products are functionally equivalent, meaning they provide the exact same feature set.

Assume the REC has chosen Allscripts, eMDs, eClinicalworks, Greenway, and McKesson Practice Partner as “prequalified” products, but the hospital has standardized around Siemens for many of its legacy I.T. solutions. There is no doubt that these are all good vendors, but what are the other choices? Would any other EHR products be more convenient for the hospital to work with?

In the report returned by the EHR Selector, note that Nextgen, Pulse Systems, a second Allscripts product and Aprima also match the criteria. Also, Practice One (Shown bottom right) is a near miss. These systems all share the same 227 features. How does this help? Well, Nextgen and Siemens are alignment partners, including interfacing, so NextGen might be a good choice for that hospital.

This approach gives doctors three additional products to consider that are exact functional matches to the original group, and several more close matches to be considered, increasing their choices by 100% over what this REC would pick.

As in this case, usually the EHR product group has expanded, and some of the additional, functionally-equivalent EHRs may be easier to interface to the hospital’s I.T. systems than the originals. Some may also be less expensive. In either case CIOs are providing their attending physicians with more choices and more control over their own EHR destinies.

Finding these solutions took less than 30 seconds on the MSP EHR Selector™. For CIOs trying to put

Click here to view the features you selected to generate the list of products below:

Click on Details to review all of that product's features:

| Company                       | Product                             | Matches | Percent | View Details                     | Links   |
|-------------------------------|-------------------------------------|---------|---------|----------------------------------|---|
| Pulse Systems, Inc.           | 2011 Pulse Complete EHR             | 227/227 | 100%    | <a href="#">Details Selected</a> | <a href="#">Request Demo</a><br><a href="#">Request Literature</a>  |
| NextGen Healthcare            | NextGen® EHR                        | 227/227 | 100%    | <a href="#">Details Selected</a> | <a href="#">Request Demo</a><br><a href="#">Request Literature</a><br><a href="#">View Demo</a><br><a href="#">KLAS</a> |
| McKesson                      | Practice Partner Patient Records    | 227/227 | 100%    | <a href="#">Details Selected</a> | <a href="#">Request Demo</a><br><a href="#">Request Literature</a><br><a href="#">KLAS</a>                              |
| Greenway Medical Technologies | PrimeSuite                          | 227/227 | 100%    | <a href="#">Details Selected</a> | <a href="#">Request Demo</a><br><a href="#">Request Literature</a><br><a href="#">KLAS</a>                              |
| eClinicalWorks LLC.           | eClinicalWorks                      | 227/227 | 100%    | <a href="#">Details Selected</a> | <a href="#">Request Demo</a><br><a href="#">Request Literature</a>  |
| e-MDs                         | e-MDs Solution Series               | 227/227 | 100%    | <a href="#">Details Selected</a> | <a href="#">Request Demo</a><br><a href="#">Request Literature</a><br><a href="#">View Demo</a>                         |
| Allscripts                    | MyWay                               | 227/227 | 100%    | <a href="#">Details Selected</a> | <a href="#">Request Demo</a><br><a href="#">Request Literature</a>  |
| Aprima formerly Medica        | Medica Patient Relationship Manager | 226/227 | 100%    | <a href="#">Details Selected</a> | <a href="#">Request Demo</a><br><a href="#">Request Literature</a>  |
| Allscripts                    | Enterprise                          | 226/227 | 100%    | <a href="#">Details Selected</a> | <a href="#">Request Demo</a><br><a href="#">Request Literature</a>  |
| PracticeOne, LLC              | e-Medsys EHR                        | 222/227 | 98%     | <a href="#">Details Selected</a> | <a href="#">Request Demo</a><br><a href="#">Request Literature</a><br><a href="#">KLAS</a>                              |

together EHR product menus for attending physicians, the EHR Selector™ is truly a force-multiplier. CIO/Consulting subscriptions allow the CIO to actually manage EHR selection for all attending physicians and is available at low cost.

The EHR Selector™ transforms the hospital CIO into a helpful and collaborative partner with the physician, and not an EHR adversary trying to force a particular EHR on them.

In the tables which follow this article, we have printed a brief summary of 40 EHR features for about 75 of the products we track, but that only scratches the surface of the information that is available, and printed information is never timely; which is why the MSP EHR Selector™ is a Web-based product database, maintained by the EHR

developers themselves, and independently vetted by CSMed, LLC.

On the MSP EHR Selector, printing a detailed, side-by-side comparison of all functionality for only three EHR vendors would require 24 pages, as the profile contains 680 features per vendor, including PHR interfaces, practice management system (PMS) integration, PQRI and quality measures, forty-four medication related functions and so on.

Hospitals can obtain discounted subscriptions on behalf of their attending physicians and encourage them to pick their own EHRs.

For information on this program, contact Art Gasch at 732-219-5090 or by e-mail at [agasch@ehrselector.com](mailto:agasch@ehrselector.com) Δ

| Companies   | Name   | Ver             | Deployment                 |                          |                       |                         |                              |                            | User Interface        |                      |                         |                 |                        |                            |                       |                        |                         |
|---|--|-----------------|----------------------------|--------------------------|-----------------------|-------------------------|------------------------------|----------------------------|-----------------------|----------------------|-------------------------|-----------------|------------------------|----------------------------|-----------------------|------------------------|-------------------------|
| www.ehrselector.com<br>(More EHR Vendors<br>links for company address,<br>phone and website URLs) | Product Name                                   | Current Version | Office, Client/Server      | Office, on a Workstation | Web ASP Remote Server | Webserver Run In-office | Webserver In-office + Remote | Another Type of Deployment | Template + Pick Lists | Dictate + SR w/o NLP | Dictation + SR with NLP | Freeform Typing | Handwrite w/o Template | Handwriting Into Templates | Document Scan w/o OCR | Document Scan with OCR | F=Full EHR, C=Component |
|   |  |                 | ABEL Medical Software Inc. | ABELMed EHR - EMR/PM V11 | 10/11/2010            | X                       | X                            | X                          | X                     | X                    |                         | X               | X                      |                            | X                     | X                      | X                       |
| Accra Med Software Inc.   | Filopto Practice Management System             | 8.5             | X                          | X                        |                       |                         |                              |                            | X                     | X                    |                         | X               | X                      | X                          | X                     | X                      | F                       |
| Allscripts  | Enterprise                                     | 8/30/2008       | X                          |                          | X                     | X                       | X                            |                            | X                     | X                    |                         | X               | X                      | X                          |                       | X                      | F                       |
| Allscripts  | Myway  |                 |                            |                          | X                     | X                       | X                            |                            | X                     | X                    |                         |                 |                        |                            | X                     |                        | F                       |
| Allscripts  | Professional                                   | 12/9/2010       | X                          |                          | X                     | X                       | X                            |                            | X                     | X                    |                         | X               | X                      | X                          |                       |                        | F                       |
| Allscripts/Eclipsys   | Sunrise Ambulatory Care                        |                 |                            |                          | X                     | X                       | X                            |                            | X                     | X                    |                         |                 |                        |                            |                       |                        | F                       |
| American Medical Software   | American Medical Software-EMR                  | V22             | X                          | X                        |                       |                         |                              |                            | X                     |                      |                         | X               | X                      | X                          | X                     |                        | F                       |
| Aprima Medical Software   | Aprima PRM 2011                                | 2011            | X                          | X                        | X                     | X                       | X                            |                            | X                     | X                    | X                       | X               | X                      | X                          | X                     | X                      | F                       |
| ASPMO Inc.  | AMOS   |                 |                            |                          | X                     |                         |                              |                            | X                     | X                    | X                       | X               | X                      | X                          | X                     | X                      | F                       |
| Axolotl Corp  | Elysium EMR                                    | V9.1            |                            |                          | X                     |                         |                              |                            | X                     | X                    |                         | X               | X                      | X                          | X                     |                        | F                       |
| Cerner Corp.  | PowerWorks EMR                                 |                 |                            |                          |                       |                         |                              |                            | X                     | X                    |                         | X               |                        |                            | X                     |                        | F                       |
| CHARTCARE, Inc.   | ChartCare EMR                                  |                 |                            |                          | X                     | X                       | X                            |                            | X                     | X                    |                         | X               |                        |                            |                       |                        | F                       |
| Clinix Medical Information Services LLC   | ClinixMD                                       | V7.5.7          |                            |                          | X                     |                         |                              |                            | X                     |                      |                         | X               | X                      | X                          | X                     |                        | F                       |
| Core Solutions, Inc.  | Cx360  | Cx360           | X                          | X                        | X                     | X                       | X                            |                            | X                     |                      |                         | X               |                        |                            | X                     | X                      | F                       |
| Crescendo Systems Corp.   | Centro   | 1.0.28.5        | X                          |                          |                       |                         |                              |                            | X                     | X                    | X                       | X               | X                      | X                          |                       |                        | F                       |
| CureMD Corp.  | CureMD EMR                                     |                 |                            |                          | X                     | X                       | X                            |                            | X                     | X                    |                         | X               |                        |                            | X                     |                        | F                       |
| DavLong Business Solutions  | MedInformatix                                  |                 |                            |                          |                       |                         |                              |                            |                       |                      |                         |                 |                        |                            |                       |                        | F                       |
| DocComply   | DocComply                                      | 3.9             |                            |                          | X                     |                         |                              |                            | X                     |                      | X                       | X               |                        |                            | X                     |                        | F                       |
| DocPatientNetwork   | Doctations                                     | 2               |                            |                          |                       |                         | X                            | X                          | X                     | X                    | X                       | X               | X                      | X                          | X                     | X                      | F                       |
| DocuMed, Inc.   | DocuMed  | 6.3             | X                          | X                        | X                     | X                       | X                            |                            | X                     | X                    | X                       |                 |                        |                            | X                     | X                      | F                       |
| eClinicalWorks LLC  | eClinicalWorks                                 |                 |                            |                          | X                     | X                       | X                            |                            | X                     | X                    |                         | X               | X                      | X                          |                       | X                      | F                       |
| Electronic Services Technologies  | The Physician's Practitioners Office Assistant | V3              | X                          | X                        |                       | X                       | X                            |                            | X                     |                      |                         | X               |                        |                            | X                     |                        | F                       |
| e-MDs   | e-MDs Solution Series                          | 6/9/2010        | X                          |                          | X                     | X                       | X                            |                            | X                     | X                    |                         | X               |                        |                            |                       | X                      | F                       |
| EncounterPro Healthcare Resources/JMJ   | EncounterPRO                                   |                 |                            |                          |                       |                         |                              |                            | X                     | X                    |                         | X               |                        |                            | X                     |                        | F                       |
| eScribe EMR Solutions, Inc.   | escribeHOST                                    |                 |                            |                          | X                     |                         |                              |                            | X                     | X                    |                         | X               | X                      | X                          | X                     | X                      | F                       |
| First Medical Solutions   | First Medical Suite                            | 2               | X                          |                          | X                     | X                       | X                            |                            | X                     | X                    | X                       | X               |                        | X                          |                       |                        | F                       |
| Galen Corp.   | Cerebella 2006                                 | Cerebella 2006  | X                          |                          |                       |                         |                              |                            | X                     | X                    |                         | X               | X                      | X                          |                       |                        | F                       |
| GE Healthcare   | Centricity EMR                                 |                 |                            |                          |                       |                         |                              |                            | X                     | X                    |                         | X               |                        |                            | X                     |                        | F                       |
| GEMMS   | GEMMS/ONE                                      |                 | X                          |                          | X                     | X                       | X                            |                            | X                     | X                    |                         | X               | X                      | X                          |                       | X                      | F                       |
| Greenway Medical Technologies   | PrimeSuite                                     |                 |                            |                          | X                     | X                       | X                            |                            | X                     | X                    |                         | X               |                        |                            |                       |                        | F                       |
| HEALTHeSTATE LLC  | HEALTHeSTATE                                   | 5.1             |                            |                          | X                     |                         |                              |                            | X                     | X                    |                         | X               |                        | X                          |                       |                        | F                       |
| Henry Schein Medical Systems  | MicroMD EMR                                    | 6/12/2009       |                            |                          | X                     | X                       | X                            |                            | X                     | X                    |                         | X               | X                      | X                          |                       |                        | F                       |
| Ingenix   | Ingenix CareTracker                            | 7               |                            |                          |                       |                         | X                            | X                          | X                     | X                    | X                       | X               | X                      | X                          | X                     |                        | F                       |
| Integrated Systems Management Inc.  | OmniMD   | 8.2             | X                          |                          | X                     | X                       | X                            |                            | X                     | X                    | X                       | X               | X                      | X                          | X                     | X                      | F                       |
| Intivia, Inc.   | InSync   | 5.4             |                            |                          |                       | X                       | X                            |                            | X                     | X                    | X                       | X               | X                      | X                          | X                     |                        | F                       |
| iSALUS healthcare   | OfficeEMR 2008                                 |                 |                            |                          | X                     | X                       | X                            |                            | X                     | X                    |                         | X               |                        |                            |                       |                        | F                       |
| LoginClinic, Inc.   | Login CDSS                                     | 1.0.0           |                            |                          | X                     | X                       | X                            |                            | X                     | X                    |                         | X               |                        |                            | X                     |                        | F                       |
| M2 Information System, Inc.   | MicrobloggingMD                                | 1               |                            |                          |                       |                         |                              |                            |                       |                      |                         |                 |                        |                            |                       |                        | F                       |



| Companies   | Name                                  | Ver       | Deployment            |                          |                        |                         |                              | User Interface             |                       |                      |                         |                 |                        |                            |                       |                        |                             |
|---|---------------------------------------|-----------|-----------------------|--------------------------|------------------------|-------------------------|------------------------------|----------------------------|-----------------------|----------------------|-------------------------|-----------------|------------------------|----------------------------|-----------------------|------------------------|-----------------------------|
|   |                                       |           | Office, Client/Server | Office, on a Workstation | Web, ASP Remote Server | Webserver Run In-office | Webserver In-office + Remote | Another Type of Deployment | Template + Pick Lists | Dictate + SR w/o NLP | Dictation + SR with NLP | Freeform Typing | Handwrite w/o Template | Handwriting into Templates | Document Scan w/o OCR | Document Scan with OCR | F = Full EHR, C = Component |
| www.ehrselector.com<br>(More EHR Vendors<br>links for company address,<br>phone and website URLs) | Horizon Ambulatory Care               |           |                       |                          |                        |                         |                              |                            |                       |                      |                         |                 |                        |                            |                       |                        | F                           |
|   | Practice Partner Patient Records      |           |                       |                          | X                      | X                       | X                            |                            | X                     | X                    |                         | X               |                        |                            |                       | X                      | F                           |
|   | Pro EMR                               | 2.4.0.1   |                       |                          | X                      |                         |                              |                            | X                     |                      |                         | X               | X                      | X                          |                       |                        | F                           |
|   | InteGreat EHR                         |           | X                     | X                        | X                      | X                       | X                            |                            | X                     | X                    |                         | X               | X                      | X                          |                       | X                      | F                           |
|   | Medflow EHR                           | 7.6       | X                     | X                        | X                      | X                       | X                            |                            | X                     |                      |                         |                 |                        |                            |                       |                        | F                           |
|   | Medical Practice Solutions            | 3.5.1     | X                     |                          |                        |                         |                              |                            | X                     |                      | X                       | X               |                        |                            | X                     |                        | F                           |
|   | MedWorxs Evolution                    | 5         |                       |                          | X                      |                         |                              |                            | X                     |                      | X                       |                 |                        |                            | X                     |                        | F                           |
|   | MeridianEMR                           | V5.0      | X                     |                          |                        |                         | X                            | X                          | X                     | X                    |                         | X               | X                      | X                          | X                     |                        | F                           |
|   | SuiteMed Intelligent Medical Software | 12        | X                     | X                        | X                      | X                       | X                            |                            | X                     | X                    | X                       | X               |                        |                            | X                     | X                      | F                           |
|   | Visual HealthNet                      | 11        | X                     |                          |                        | X                       | X                            |                            | X                     |                      |                         | X               |                        |                            | X                     |                        | F                           |
|   | XOCDOC Med EHR                        | 10/2/2010 | X                     | X                        |                        |                         |                              |                            | X                     | X                    |                         | X               | X                      | X                          |                       |                        | F                           |
|   | NextEMR                               | 1.5.0     |                       |                          | X                      |                         | X                            |                            | X                     | X                    | X                       | X               | X                      | X                          |                       |                        | F                           |
|   | TSI Healthcare                        | 5.6       | X                     |                          | X                      |                         |                              |                            | X                     |                      |                         | X               |                        |                            |                       | X                      | F                           |
|   | NextGen® EMR                          | 4/1/2010  | X                     |                          | X                      | X                       | X                            |                            | X                     | X                    |                         | X               | X                      | X                          |                       |                        | F                           |
|   | NetPracticeEHR                        | 7/1/2010  |                       |                          | X                      | X                       | X                            |                            | X                     | X                    |                         | X               |                        |                            |                       |                        | F                           |
|   | NetPracticeEHRweb                     | 7/1/2010  | X                     |                          | X                      | X                       | X                            |                            | X                     | X                    |                         | X               | X                      | X                          |                       |                        | F                           |
|   | NueMD EHR                             | 5.2       |                       |                          | X                      |                         |                              |                            | X                     |                      |                         | X               | X                      | X                          | X                     |                        | F                           |
|   | FlexMedical                           | 5.6       | X                     |                          |                        |                         |                              |                            | X                     |                      | X                       | X               | X                      | X                          | X                     |                        | F                           |
|   | EHR 24/7                              |           |                       |                          | X                      |                         |                              |                            | X                     |                      |                         | X               | X                      | X                          | X                     |                        | F                           |
|   | PatientOS EMR                         | 9/6/2010  | X                     | X                        |                        |                         |                              |                            | X                     | X                    |                         | X               |                        |                            |                       |                        | F                           |
|   | Practice Fusion                       | 2         |                       |                          | X                      |                         |                              |                            | X                     | X                    |                         | X               |                        |                            | X                     |                        | F                           |
| e-Medsys EHR  |                                       |           |                       | X                        | X                      | X                       |                              | X                          | X                     |                      | X                       |                 |                        |                            |                       | F                      |                             |
| ChartAccess   | 4                                     |           |                       | X                        | X                      | X                       |                              | X                          |                       |                      | X                       | X               | X                      | X                          |                       | F                      |                             |
| 2011 Pulse Complete EHR   | 2011                                  | X         |                       | X                        | X                      | X                       |                              | X                          | X                     | X                    | X                       | X               | X                      | X                          | X                     | F                      |                             |
| Pulse Patient Relationship Management   | V4.1<br>June 2009                     | X         |                       | X                        | X                      | X                       |                              | X                          | X                     |                      | X                       | X               | X                      |                            | X                     | F                      |                             |
| EXR   | 1                                     |           |                       | X                        |                        | X                       |                              | X                          |                       |                      | X                       |                 |                        | X                          |                       | F                      |                             |
| Clicks  | 11.0.0.60                             | X         | X                     | X                        |                        |                         |                              | X                          |                       |                      | X                       |                 |                        | X                          |                       | F                      |                             |
| Intergy EHR by Sage   | 10/04 V6.0                            | X         |                       | X                        | X                      | X                       |                              | X                          | X                     |                      | X                       | X               | X                      |                            |                       | F                      |                             |
| Sevocity EHR  | 11                                    |           |                       | X                        |                        |                         |                              | X                          | X                     |                      | X                       | X               |                        | X                          |                       | F                      |                             |
| SOAPware, Inc.  | 2011                                  | X         | X                     | X                        |                        |                         |                              | X                          | X                     |                      | X                       | X               | X                      | X                          | X                     | F                      |                             |
| Q.D. Clinical Emr   | 6.1                                   | X         | X                     | X                        | X                      | X                       | X                            | X                          | X                     | X                    | X                       | X               | X                      | X                          | X                     | F                      |                             |
| TheraManager  | 10.12                                 | X         | X                     | X                        |                        |                         |                              | X                          | X                     | X                    | X                       | X               | X                      |                            |                       | F                      |                             |
| Unifi-Med   | 5.4                                   |           |                       | X                        |                        |                         |                              | X                          | X                     | X                    |                         |                 | X                      | X                          | X                     | F                      |                             |
| VersaSuite  | 6/1/2010                              | X         |                       | X                        | X                      | X                       |                              | X                          | X                     |                      | X                       |                 |                        |                            | X                     | F                      |                             |
| Tap N Talk  | 7.0.01                                | X         | X                     |                          |                        |                         |                              |                            | X                     | X                    |                         |                 |                        |                            | X                     | F                      |                             |
| WRS EHR   | 4                                     |           |                       | X                        |                        |                         |                              | X                          |                       | X                    | X                       | X               | X                      | X                          |                       | F                      |                             |
| Wellssoft EDIS  | V11                                   | X         |                       |                          |                        |                         |                              | X                          | X                     | X                    | X                       | X               |                        | X                          |                       |                        |                             |

| System Capabilities/Options |                    | Standards Fully Supported    |                          |                          |               | Computer OS Required | Certifications  |                    |                   | Rx Data Source                        |            | Vocabulary & Ontologies |                      |                            |                           |                            |        |           |                           |                 |                     |                            |                              |
|-----------------------------|--------------------|------------------------------|--------------------------|--------------------------|---------------|----------------------|-----------------|--------------------|-------------------|---------------------------------------|------------|-------------------------|----------------------|----------------------------|---------------------------|----------------------------|--------|-----------|---------------------------|-----------------|---------------------|----------------------------|------------------------------|
| EHR-like Upgradable to EMR  | Combined EHR + PMS | Supports Opt. Patient Portal | Supports In-office Kiosk | Workflow Engine Embedded | HL7 Messaging | CCD/CCR              | DICOM (Imaging) | LOINC (Laboratory) | RxNorm (Pharmacy) | W=Windows<br>M=Mac<br>U=Unix<br>A=All | CCHIT 2008 | CCHIT 2011              | ONC Meaningful Use** | First Databank/Gold/Multum | Vendor Created/Maintained | No Rx-Rx, Allergy Checking | MEDCIN | SNOMED CT | Vendor-created Vocabulary | ICD9-CM Billing | CPT Codes Generated | E&M Quick Coder Integrated | Charted Data is Unstructured |
|                             |                    |                              |                          |                          |               |                      |                 | X                  |                   |                                       |            |                         |                      |                            |                           |                            |        | X         |                           | X               | X                   | X                          |                              |
|                             | X                  | X                            |                          |                          | X             |                      | X               |                    |                   | W                                     |            | X                       |                      | X                          |                           |                            | X      | X         |                           | X               | X                   | X                          |                              |
|                             | X                  | X                            | X                        | X                        | X             |                      | X               |                    |                   | W/M                                   | X          |                         |                      | X                          |                           |                            | X      |           |                           | X               | X                   |                            |                              |
|                             |                    |                              |                          |                          | X             |                      |                 |                    | X                 | W                                     |            |                         |                      | X                          |                           |                            |        |           |                           |                 |                     |                            | X                            |
|                             | X                  | X                            | X                        |                          | X             | X                    |                 |                    |                   | W/M                                   | X          |                         |                      | X                          |                           |                            |        |           |                           | X               | X                   | X                          |                              |
|                             | X                  | X                            | X                        | X                        | X             |                      | X               | X                  |                   | W                                     |            | X                       |                      | X                          |                           |                            | X      | X         |                           | X               | X                   | X                          |                              |
|                             | X                  |                              |                          | X                        | X             | X                    |                 |                    | X                 | A                                     |            |                         |                      | X                          |                           |                            |        | X         | X                         | X               |                     |                            |                              |
|                             |                    |                              |                          |                          |               |                      |                 |                    |                   | W                                     |            |                         |                      |                            |                           |                            |        |           |                           | X               |                     |                            |                              |
| X                           |                    |                              | X                        | X                        | X             | X                    |                 | X                  |                   | A                                     |            |                         |                      | X                          |                           |                            | X      | X         | X                         | X               | X                   |                            |                              |
| X                           | X                  | X                            | X                        | X                        | X             | X                    | X               |                    |                   | W                                     | X          | X                       |                      | X                          |                           |                            | X      |           | X                         | X               | X                   | X                          |                              |
|                             | X                  | X                            | X                        | X                        | X             | X                    | X               |                    |                   | W                                     |            | X                       | X                    | X                          |                           |                            |        | X         |                           | X               | X                   | X                          |                              |
|                             | X                  | X                            | X                        | X                        | X             | X                    | X               |                    |                   | W                                     |            |                         |                      | X                          |                           |                            |        |           |                           | X               | X                   | X                          |                              |
|                             |                    | X                            |                          |                          |               |                      |                 |                    | X                 | A                                     |            |                         |                      | X                          |                           |                            |        |           |                           | X               | X                   |                            |                              |
|                             | X                  | X                            | X                        | X                        | X             | X                    | X               |                    |                   | U                                     |            |                         |                      | X                          |                           |                            |        | X         |                           | X               | X                   | X                          |                              |
| X                           |                    | X                            | X                        | X                        | X             | X                    | X               | X                  | X                 | A                                     | X          |                         |                      | X                          | X                         |                            | X      | X         |                           | X               | X                   | X                          | X                            |
|                             | X                  | X                            | X                        | X                        | X             | X                    | X               | X                  | X                 | A                                     |            | X                       | X                    | X                          |                           |                            | X      | X         |                           | X               | X                   | X                          |                              |
|                             |                    |                              |                          | X                        | X             | X                    | X               | X                  | X                 | W                                     |            |                         |                      | X                          |                           |                            |        | X         |                           | X               | X                   |                            |                              |
| X                           |                    | X                            | X                        |                          |               |                      | X               |                    |                   | W                                     |            |                         |                      | X                          | X                         |                            |        |           | X                         |                 | X                   |                            |                              |
|                             |                    | X                            | X                        |                          |               |                      | X               | X                  | X                 | W                                     |            | X                       |                      | X                          |                           |                            | X      |           |                           | X               | X                   | X                          |                              |
|                             | X                  | X                            | X                        | X                        | X             | X                    |                 |                    |                   | A                                     |            | X                       |                      | X                          |                           |                            |        | X         |                           | X               | X                   | X                          |                              |
|                             | X                  | X                            | X                        | X                        | X             | X                    |                 | X                  | X                 | W                                     |            |                         |                      | X                          |                           |                            |        |           | X                         | X               | X                   | X                          |                              |
|                             |                    | X                            | X                        |                          |               |                      | X               | X                  |                   | M/U                                   | X          | X                       |                      | X                          | X                         |                            |        |           | X                         | X               | X                   | X                          |                              |
|                             | X                  | X                            | X                        | X                        | X             | X                    |                 | X                  | X                 | W                                     |            |                         |                      | X                          |                           |                            |        |           | X                         | X               | X                   | X                          |                              |
|                             |                    | X                            | X                        |                          |               |                      | X               | X                  |                   | W                                     |            |                         |                      | X                          |                           |                            |        | X         |                           | X               | X                   | X                          |                              |
|                             |                    | X                            |                          |                          |               |                      |                 |                    |                   | M                                     |            |                         |                      | X                          | X                         |                            |        | X         |                           |                 |                     |                            |                              |
|                             | X                  | X                            | X                        | X                        | X             | X                    | X               | X                  | X                 | A                                     | X          |                         |                      | X                          |                           |                            | X      | X         |                           | X               | X                   | X                          | X                            |
|                             |                    |                              | X                        |                          | X             |                      |                 |                    |                   | W                                     | X          |                         |                      | X                          |                           |                            |        |           | X                         | X               | X                   | X                          |                              |

## ...To Boldly Go... (Or Is It Safe to Go Back In the Water)? *by Richard Bloss*

The good people of HIMSS have invited me to speak at their January Seminar in Brussels. I am going to speak on “The 10 Steps to Being Successful” – in Europe. I happen to know quite a lot about this subject, and I suppose it’s one of those signs in life that tell you that “you have arrived”, the moment when your peers recognise you for being, well, a person of import. I think that is the right word. And I feel duly humble.

Actually that last bit isn’t true. I don’t feel humble. I feel bloody terrified. Good and great people are jetting across the Atlantic, taking trains across Europe, to be present here, and I am talking about a topic where everybody (at that level of decision maker) feels that they already know whatever it is one needs to know – about “being successful”. They don’t need someone else preaching to the non-converted. They are already converted, and they already know.

It’s one thing being say a doctor, or a surgeon, where one’s ability is unique and respected. Quite another when talking about sales and marketing, where everybody feels they know better than you, and it runs parallel with everyone’s view of their local soccer team. We can all be a “football” manager.

And that’s the problem. Seminars are full of speakers giving advice to people that would prefer not to take it. It seems to be part of human nature; the one thing we learn from history... Is that we don’t learn from history.

But then again, just as my local preacher often repeats the same sermon about sin – there are times when some essential rudimentary truths, need to be recalled and repeated. Except that in this case, the European market has moved on. It is time for a fresh look.

First of all, the “European” market is as much a revenue stream for U.S. hospitals, as U.S. healthcare vendors.

No European country has got it totally right as yet in terms of its delivery of patient services, and several have got it horribly wrong, which is something the Americans don’t seem to comprehend or simply deny and overlook. And they use largely the same Patient Administrative System (PAS) [hospital information systems] as you do in the States. This means you can go offer your expert consulting advice knowing that you have a ready market of listeners.

Hospitals on this side of the Atlantic are becoming more and more individual in their choices, and this is great news for the second tier and emerging EHR/I.T. solution vendors. It means there is space for them in the market. This is particularly relevant in this modern age of convergence and U.S. focus on only 1st tier solutions. The more things that link together, the better. More is definitely... more.

The fact is, probably the greatest area of synergy, and therefore of opportunity, is that magic word “convergence”. It is where Europe scores best in its knowledge of mobile data and how to connect and access data from everywhere including planet Zog – but where U.S. companies fare best is Europe’s lack of forward thinking in building this knowledge into something that delivers actual patient care. Small/Medium niche integration players such as: Toronto’s “Connexall”, and “Bayscribe” down in Boston, are typical of what I call the new generation U.S. vendors that appreciate their global advantage.

**Convergence** “Meaningful Use” never actually existed here as a buzz-word for being cool. We went straight from “Interoperability” on to “Convergence” in the same way as we bypassed Jail on the Monopoly Board.

In many ways, this has been a good thing. The transition from ICD9 to ICD10 at a technical level, for those hospitals that wish to include this – has been accepted as a defacto standard. But

where there are marked differences, is that Europe, and UK in particular, is not a reimbursement market place, and “paid for by the patient” hospital care, is not the norm.

Yet, far from being a difficulty, this reduces the issues when introducing new solutions. It means that vendors can focus only on the patient benefits that can be delivered – as opposed to the financial aspects of, “who pays for what”. This gives U.S. firms a real advantage as life gets tougher in European financing of healthcare and more and more people are opting for patient care. It means that U.S. vendors already have the issues of convergence linked to business – already worked out.

Now, there are some large exceptions – for example, the Spanish market in particular, with its complicated multi-level structures of Mutuas, and general open-to-all hospitals, and private insurance-financed hospitals – has their own way of doing things, and any vendor from wherever – just has to get on with it, and do things their way.

But if anything, hospitals in Europe, are looking to reduce their complexity. This is seen in two ways. First, at the worst level, countries that have suffered most in the recent financial crises – such as Ireland and Portugal – just don’t have the budget for new medical solutions, it is politically incorrect whichever way you slice it. But equally, there are at least three countries in the CEE area, that have published and paid for multi-million dollar “projects” based on a “technical” assessment of what they thought they wanted (in other words, incorporating all the technical buzz words and integrated standards) – that, after evaluation, have not translated into mainstream adoption. As one eHealth Minister told me over coffee just a few days ago, “we did an audit, and found that the new structures we thought we wanted, just didn’t add any significant value.”

Having said all that... the really Good News for the U.S. is that at least European hospitals and governments are prepared to put their money where their mouth is and, for those countries that are largely financed by that great untapped pot of gold – the European parliament in Brussels – they are a great way to learn from other's mistakes. These seem to be that following "international guidelines" is not necessarily in the long-term good, and it's a bit like buying a pair of shoes – what works for you, works for you.

This means that, whilst governments would like to impose proper standards of EHR implementation – none can actually ever deliver that. For a start, the jury is still out as to where the EHR stops and a health information exchange (HIE) portal begins. At a "personal political level", changes of government mean that e-health strategies often conflict with new incoming government ministers. And Ministers are having to come to terms with the fact that the best route for a "portal" facility that introduces convergence of data and access by remote doctors and patients, is best served by focussing on those EHRs that can deliver a wider brief. So we get back to the individual regional hospital deciding for themselves, and have come full circle.

Until recently, hospitals and vendors seemed limited by two avenues, and focused on either some sort of PACS addition to a patient record; or some sort of network and IP address-based patient tracking, that did not deliver that much. That's not to say the technology did not exist – it was just that didn't conceive how to use and link it to produce something meaningful. Sure, there were exceptions; I remember an eHealth seminar in Stockholm several years ago, where the Consultant Surgeon proudly showed us his PACS images on his Compaq Ipaq (remember them?) and how he could send them to his buddy in Rotterdam for advice. All very cool. And we all marvelled and we gave the sort of expressions of delight

that my kids show when they get a new Playstation...

"...And can it really do THAT??"

This is all going to change. Life is different now. We have moved on from StarTrek and government-financed, virtual wishful thinking to what I call practical I.T. reality. And there are some good examples of this happening already. The advent of voice dictation within the patient record, is treated as an essential part of a patient information and accessible as an .mp3 file – and cloud-based data retrieval, will mean that whole in-house technology platforms will become redundant. The theory goes that in a decade or two, we will look at "client/server" architecture in the same way that we look back at MS-DOS.

But will we? As much as I personally like my new toys, the big barrier to our "connected world" and convergence growth, is going to be speed of accessing data. Large amounts of data, as per a sound or video file for example, can take time to access in our virtual world, whereas accessing stuff with bits of string and Windows XP works fine, thanks – and it has less security vulnerabilities. Large, cloud-based information repositories remain juicy targets for hackers and thieves. What a storage chest of confidential and personal data they hold.

So, ultimately, where do we go from here? Maybe we have got this all wrong. Here we are talking about technology, but what we really should be talking about, is just enhanced patient care and practical deliverables.

Europe knows all about technology. What we don't know, is how to glue it all together. That, dear reader, is the new European healthcare opportunity, and perhaps it is also the new U.S. healthcare opportunity. Δ

*Richard Bloss, our correspondent in the U.K., continues to provide Industry Alert™ readers with insight about what's happening 'across the pond', with a perspective on the European HIMSS activities and other developments.*

## Hot Topics in Anesthesia at the Chilly December PGA in NYC

The PGA is the “other” anesthesia meeting, held every year at the NYC Marriott Marquis on Broadway about 45-60 days after the ASA (American Society of Anesthesiology) meeting. It’s a wonderful opportunity to catch up on what’s happening in anesthesiology, and to take in some NYC shopping, theater and holiday atmosphere in the bargain. The bullets throughout the article indicate some of the hot topics at this year’s conference.

**Office Surgery Patient Safety - A Growing Concern** The incidence of adverse events for surgeries performed outside of the hospital, is higher (than inside hospitals), particularly in physician offices.

As the number of surgeries in outpatient (OP) settings increase, so do problems. Insurance companies ignore the problems because doing outpatient surgeries is less expensive than doing inpatient ones. It is an example of the continued shift to poorer quality, cheaper care typical of Obama healthcare reform. The trend of some surgeons keeping patients overnight in their offices, begs the question of whether patient safety or ill-advised cost reductions are really in the driver’s seat for national healthcare policy. In some office-based situations there isn’t an RN to remain/monitor the patient during the recovery period, where patients often get into trouble.

Because an office is not always near a hospital, and is not equipped to handle some complications, one has to question if national/insurance policy isn’t putting patients needlessly at risk in some cases? *“When emergency assistance is needed in the stand-alone OP setting (particularly for surgeries over 6 hours or ending after 3 P.M.), it’s often remote and not readily available,”* according to Isabelle DeLeon Volpe, M.D. in her session, *Patient and Procedure Selection in the Office-Based Setting.*

Dr. Volpe pointed out that, *“surgeries that have the possibility of excessive blood loss,*

*fluid shifts and hypothermia must be carefully considered when determining the suitability of the surgery.”* She continued, *“the standard of care in the office-based setting should be no less than that in a hospital,”* with the operative word being should, not is.

### Always Guidelines, Never Standards

The ASA and the American Society of Plastic Surgeons (ASPS) have issued more ‘Guidelines’ (but no standards) to reduce adverse events (AE) -- because of lack of data about which patients to exclude from the office-based surgery setting. Complicating the data question is the fact that AEs and life-threatening events don’t always occur on the day of surgery. This was covered in the presentation – *Review of Regulations Pertaining to Office-Based Procedures -Legal and Regulatory Issues in OBA* [office-based anesthesia]. AEs included [in NY]:

1. Patient death within thirty days of surgery; or
2. Unplanned transfer to a hospital; or
3. Unscheduled hospital admission, within seventy-two hours, for longer than twenty-four hours; or
4. Any other serious or life-threatening event; or
5. Any suspected transmission of a Blood-borne Pathogen (BBP) from a healthcare practitioner to a patient or between patients originating in an OBA practice as a result of improper infection control practices.

A ‘serious or life-threatening event’ is one that ‘results in temporary or permanent physical loss or mental impairment of bodily function; and /or substantially limits one or more of the major life activities of the individual; or events such as wrong site surgery or retained foreign body.’

### Too Many Accreditors Spoil Research Data

Inconsistent regulation of the OBA setting on a state-by-state basis makes coherent outcomes data collection challenging and impedes the analysis of what outcomes and “best procedures” are. The fact that

no less than three different agencies can accredit Office-based Anesthesia also muddies the certification requirements. Accrediting organizations include: the Accreditation Association for Ambulatory Health Care (AAAHC), the American Association for Accreditation of Ambulatory Surgery Facilities (AAAASF) and the Joint Commission (JCAHO).

### Morbid Obesity & Sleep Apnea Update

OSA is defined as cessation of airflow for >10 seconds despite continuing ventilatory effort, five or more times per hour of sleep. It’s usually associated with a decrease in arterial oxygen saturation of >4% according to the above presentation; which also stated, *“Obesity (defined as a body mass index [BMI] > 30) is reaching epidemic proportions in the United States and has become a major public health hazard... and creates enormous problems for patients, surgeons, and anesthesiologists alike.”* One indicator of potential issues is neck circumference equal to or greater than 18 inches, according to the speaker.

The session pointed out that, *“In the minority of OSA patients who are not-obese, causative risk factors are craniofacial and orofacial bony abnormalities, nasal obstruction, and hypertrophied tonsils.”*

The discussion centered around whether OSA should be a contraindication for ambulatory surgery... *“The risks of caring for these challenging patients in the ambulatory venue are further amplified by the unfortunate fact that 80 to 95% of people with OSA are undiagnosed; as they have neither a presumptive clinical and/or a sleep study diagnosis of OSA...”*

The ASA Guidelines (not standards) suggest that, *“... for procedures adult airway surgery, tonsillectomy in children < 3 years of age, and laparoscopic surgery involving the upper abdomen are inadvisable outpatient procedures -- according to ASA Guidelines.”* Key point, CPAP should be available during recovery from procedures performed on OSA patients.

*“But the effects (of OSA) continue beyond the immediate recovery,”* continued Eugene R Viscusi, MD, Director, Acute Pain Management, Thomas Jefferson University, Philadelphia, PA pointed out, *“In a recent study of 1286 patients with primary OSA, 6.5% were noted to transiently develop treatment-emergent OSA after initiation of continuous positive airway pressure (CPAP) therapy with 1% still affected at 8 weeks.”*

*“This suggests that discharged patient education should include information about such potential complications and how it might be handled in the home CPAP setting. It also may require the modification of post-discharge pain meds prescribed,”* Dr. Viscusi’s pointed out, *“...Residual effect of anesthetics and sedatives may contribute to respiratory depression but the sedating side effects of many adjuvant medications (antiemetics, antihistamines, beta blockers) should not be overlooked. Medications with mild sedating effects have the potential to cause serious adverse events when combined with opioids in patients with OSA.”*

Continuous pulse oximetry is indicated for sleep apnea patients receiving opioids. New SpO2 technologies, like Nonin, Masimo SET and others reduce false alarms and track desaturations more accurately, reducing the burden on nurses in the hospital or OP recovery areas. OSA patients would also benefit from an easy-to-use, effective respiratory monitoring device. Several vendors were showing such devices at the PGA. But what about OSA patients at home who are receiving opioid-based pain medications?

Some more recent and advanced CPAP devices from ResPironics/Philips and ResMed do provide the ability to monitor SpO2 during sleep in the home setting, but these are more expensive units that are not initially prescribed for newly-diagnosed OSA patients.

### **What About Post-Polio Syndrome?**

A thought, while OSA is becoming a well-recognized problem, are patients with post-polio syndrome still being overlooked? We found no presentations on this topic in the session summaries at the PGA conference.

This is problematic because former polio patients are now in their 70’s and showing up in surgery with increasing frequency.

**Testing & Prevention of Malignant Hyperthermia (MH)** Dr. Henry Rosenberg reported progress in attempts to use genetic testing to find a simpler way to identify MH patients. Some promising new approaches are emerging.

- Use and value of cerebral oximetry during surgery to reduce cognitive impairment after surgery by continuous and noninvasively tracking O2 availability in the brain was covered.

Cerebral oximetry uses near infrared spectrometry to track blended oxygen saturation (which normally lies between arterial (SaO2) and jugular venous oxygen saturation (SjvO2), e.g. SaO2 > SctO2 > SjvO2.

Outcome data referenced at PGA sessions has shown that, *“low perioperative SctO2 is associated with poor patient outcomes, during cardiotoracic surgery and vascular neck procedures, particularly in the elderly, where as many as 5 percent of patients can show some post-operative cognitive dysfunction or impairment after surgery.”*

Newer cerebral oximeters that use up to 4 wavelengths have improved accuracy, were exhibited at the PGA.

### **New Anesthesia Workstations Enhance Patient Safety**

There were three major enhanced anesthesia workstations at PGA – the Prima SP and SP2, the Mindray (read Datascope) A5 system and the new (510(k)-pending) Maquet’s Servo-i, the most interesting departure from the stable of other anesthesia workstations on display. FDA approval for this ‘work in progress’ should be sometime in 2011 Q1, if all goes well.

Keith J Ruskin, MD, Professor of Anesthesiology and Neurosurgery, Yale University School of Medicine, commented in his Anesthesia Machine Safety Issues presentation, *“The latest generation of anesthesia gas machines and*

*physiologic monitoring systems [brings] a wide range of capabilities, from advanced monitoring to ventilator functions comparable to that of an ICU ventilator.*

*Current designs may help to improve patient safety by incorporating features such as checklists (e.g., the FDA anesthesia machine checkout) and double-check systems that prevent unintended changes to ventilator or gas flow settings.*

*They can exchange information with an anesthesia information management system, creating an accurate, contemporaneous anesthesia record while also permitting data extraction for quality improvement.”*

Some workstations, like the GE Aisys and Avance units, require that the user complete the recommended checkout before they can be used for patient care (unless the feature is bypassed for emergency surgery situations).

Several of the Anesthesia Workstations we saw were good illustrations of the points made in Dr. Ruskin’s presentation; however some of those points made did not take into account the newest workstation features that were being shown in the exhibit area, particularly on the new Maquet Servo-i gas machine.

There has been however a good deal of progress in the evolution of patient monitoring devices for depth of consciousness, cerebral oxygen monitoring and perfusion tracking.

**Endarterectomy Safety Update** With the growth in popularity of Carotid Endarterectomy (CEA) procedures, there has been an increasing need for methods to detect and monitor cerebral blood flow to prevent cerebral ischemia when the carotid artery is occluded during the procedure. Two ways to approach this are by using either transcranial Doppler ultrasonography (TCD), or by using near-infrared spectroscopy (NIRS) cerebral oxygen saturation monitoring. This raises some issues regarding the best anesthesia approach to use – local (LA) or general (GA) anesthesia. While several papers on the topic have suggested

that the incidence of shunting is decreased when a regional anesthetic is used, implying that fewer patients are ischemic under LA with a clinical evaluation versus using GA with EEG, SSEP, TCD or NIRS monitoring and evaluations.

A new, large international (24 country) study of 3,526 patients in 95 centers who underwent CEA was reported by the General Anaesthesia versus Local Anaesthesia Group for Carotid Surgery (GALA) group and reported at PGA. In that study, *"The primary outcome was the proportion of patients with stroke (including retinal infarction), myocardial infarction or death between randomization and 30 days after surgery."* (6)

The study indicated no outcome differences in use of GA vs LA groups for carotid artery surgery. They concluded that the patient, surgeon and anesthesiologist can decide anesthetic technique to use based on experience and comfort within the group.

## References

6. Lewis SC, et al., General anaesthesia versus local anaesthesia for carotid surgery (GALA): a multi-centre, randomized controlled trial. *Lancet* 2008;372(9656):2132-42.

**Cardiac Pacing & ICD Updates** The presence of older patients who increasingly have cardiac rhythm devices complicates the lives of anesthesiologists during surgery, particularly implanted cardiac defibrillators, that could fire during surgery.

Dr. Marc Stone, Mount Sinai School of Medicine, NY, NY provided an excellent session, Update on Cardiac Rhythm Management Devices, which discussed the ASA task force recommendations to deal with such patients. But like all Guidelines, these are only recommendations that aren't binding. They will need to be charted so that in the case of an adverse event, it can be demonstrated that appropriate precautions were taken.

That should be noted by developers of AIMS (anesthesiology information management systems), who could include a CRDM checklist for the preop, intraoperative and postop Guideline items in their AIMS.

Here's what the ASA Practice Advisor states according to Dr. Stone:

## Preoperative Evaluation

- 1) Establish that the patient has a CRMD (pacemaker and/or ICD);
- 2) Identify the type of device, manufacturer, and programming;
- 3) Determine if the patient is dependent on anti-bradycardia pacing;
- 4) Establish that the device is functioning as programmed (may require interrogation of the device by a knowledgeable consultant).

## Preoperative Preparation

- 1) Determine if electromagnetic interference (EMI) is likely to occur during the planned procedure;
- 2) Decide if reprogramming of pacing functionality is necessary (e.g., to an asynchronous mode, suspension of rate modulation, etc- may require assistance of a knowledgeable consultant);
- 3) Suspend anti-tachyarrhythmia functionality (i.e., shut off the ICD; with a magnet, or with the aid of a knowledgeable consultant);
- 4) Assure the immediate availability of a backup source of pacing and defibrillation (e.g., with external pads);
- 5) Ensure appropriate placement of cautery dispersal pads and appropriately advise the surgical staff regarding the use of electrocautery.

## Intraoperative Management

- 1) In addition to standard ASA monitoring, pay close attention to the ECG and the peripheral pulse for evidence of alteration in CRMD functioning;
- 2) Actively intervene if EMI appears to be affecting CRMD function (e.g., ask the surgical staff to temporarily stop using electrocautery, apply a

magnet to a pacemaker to produce an asynchronous mode, etc);

- 3) Provide external defibrillation as required, or allow the implanted CRMD to defibrillate the patient.

## Postoperative Management

- 1) Continue to monitor the patient closely, with specific attention to the cardiac rate and rhythm;
- 2) Restore CRMD functionality to preoperative settings (or have them restored);
- 3) Consider if formal interrogation of the CRMD by a knowledgeable consultant is necessary/appropriate.

## References

1 Practice Advisory for the Perioperative Management of Patients with Cardiac Rhythm Management Devices: Pacemakers and Cardioverter-Defibrillators. *Anesth* 2005;103(1):186-98.

**In Conclusion** We found it troubling that many of these issues were issues identified over a decades ago are still issues and risks patients face, in spite of all the "Guidelines" ASA has belatedly issued. In fact, some of them (safety in office-based settings) seem to be growing problems. The equipment becomes better, providing a wider array of patient data, the anesthesiologists don't change, but the payors/government keep driving more complex and longer procedures out of the hospital setting, so where is the real problem? Δ

## Vendor Short Takes & HIMSS 2011 Previews

### ALLSCRIPTS

Allscripts announced that MedWest Health System, a three-hospital system in western North Carolina, has selected Allscripts Electronic Health Record (EHR) and Practice Management (PM) solution for its 60 employed physicians. MedWest is also planning to host and deliver the Allscripts solution to more than 200 independent physicians in the communities it serves. MedWest adds to the Allscripts market-leading client footprint in North Carolina, where the company provides solutions to more than 3,300 individual physician practices. To get the system up and running in all of its offices in that time frame, MedWest will use the Allscripts READY accelerated deployment solution, a standardized implementation “tool kit” that provides best-in-class recommendations for products, certified workflows and implementation, along with automated processes for tracking and managing the implementation.

MedWest’s physicians also will use Allscripts Remote, which allows providers to access the Electronic Health Record remotely on their iPhone™, BlackBerry® or Android smartphone®; Allscripts Patient Portal, enabling patients to access their records and communicate online with their physicians; and Allscripts Analytics, which analyzes EHR data, summarizes key performance indicators, and provides practice leaders and senior healthcare executives with high-level clinical information to manage patient populations for better health. See Allscripts at Booth 6714.

### CAPSA SYSTEMS

“Capsa Solutions announced two new lines of medical computer carts at HIMSS 2011: the LX & VX computer cart lines. Selected models from each line will be on display at the company’s HIMSS11 booth, #1063. The new lines will add to Capsa’s existing offering of medical computer carts, which includes several unique models. The LX and VX lines were created with significant input and feedback from clinical and health IT professionals worldwide. Models from both lines feature ergonomic adjustability, smaller footprints and slimmer profiles to meet the changing demands of today’s healthcare environments. Additionally, LX and VX medical computer carts are equipped with advanced security and power management software, including the new CartWatch™ Remote Management System software that permits cart fleet security control from a single PC location.

Its recent acquisition of Artromick, MMI Medcarts, and IRSG Healthcare Storage has enabled Capsa Solutions to expand its product offering built to optimize clinical efficiency, storage organization, and patient decision support. To learn more about Capsa Solutions and its new computer cart models, visit booth #1063 at the HIMSS 2011 or visit <http://www.capsasolutions.com>.

### CAPSULE TECHNOLOGIE

Capsule announced that they’ve sold over 1,100 Capsule Neurons to more than 35 hospitals in less than 10 months since its release. Facilities chose the Capsule Neuron because of its design which integrates with existing technologies and clinical workflows. It’s the first intelligent touch-screen platform dedicated to managing device connectivity at the bedside. It is the key component of Capsule’s Enterprise Medical Device Connectivity Solution; a vendor-neutral, patient-centric solution that allows hospitals to connect virtually any medical device to any information system, in any department of the hospital.

Capsule also released their Mobile Vitals Plus™ application. Mobile Vitals Plus enables the automatic collection, validation and submission of vitals to the EMR right from the point of care by mounting Capsule Neuron on the roll stand with the spot check monitor the hospital is already using, providing near real-time vitals to be recorded in the patient’s chart, saving time and improving clinical decision making.

The Capsule Neuron enables an optimized workflow and addresses the challenges of managing association at the bedside to ensure the delivery of patient-centric care solutions that fit the way the nurse and the hospital works. It’s a solution chosen by over 670 facilities, features a patient-centric, vendor-neutral design that allows hospitals to connect virtually any medical device, to any information system, in any hospital unit. For more info visit <http://www.capsuletech.com/our-solution-capsule-neuron.htm>, or call (978) 482-2337.

### e-MDS

e-MDs announces that AIDS Care, the leading provider of HIV/AIDS services in Rochester New York area, has successfully implemented e-MDs Solution Series integrated system. The clinic began planning use of the EHR in December 2009 and went live in March 2010. AIDS Care selected e-MDs based on the company’s willingness and capability to thoroughly train employees and assist with implementation. Solution Series™ integrated EHR/PM suite attracted AIDS Care because of its ability to be manipulated and customized to meet the particular needs of an HIV/AIDS-based practice.

e-MDs offered several channels for support and thorough customer attention, and has remained involved throughout the implementation process to ensure that the organization’s specific and unique needs continue to be met. AIDS Care has seen several improvements within the agency since implementation was completed. With the integration of scheduling, clinical documentation, care management, and billing; patient flow has improved, documentation has been enhanced and billing practices are timely and assured to be in compliance. See e-MDs at Booth 7955.

## GALEN CORPORATION

Galen Corporation developed their EMR solutions to fit the needs of customers and the healthcare community. Galen uses the latest, fastest, and most secure technology for its integrated solutions. Galen Corporation announces release the 2010/2011 Cerebella™ version to align with “Meaningful Use” of EMR requirements. Cerebella™ Practice Management, Financial Reporting, ePrescribing, and EMR offer affordable, innovative, and integrated solutions. Providers often explain that the biggest challenge in EMR is the initial investment, the training process, and the learning curve. Cerebella™ is present throughout the implementation period to ease the practice into the new technology. These methods have proven to lessen the impact of technology and shorten the learning period.

## gMED

gMed offers a CCHIT certified Gastroenterology, Cardiology and Urology EHR solution that can help practices take advantage of the HITECH Incentives. The robust, feature-rich gGastro, gCardio and gUro applications are easy to use and seamlessly integrate with the medical practice. The application is specifically designed to match the workflow, processes and needs of a typical specialty practice. In the newest version, the Patient Interview Form (PIF), the History of Present Illness (HPI) Template, E-prescribing as well as insurance verification were all updated. Each practice has the ability to customize the layout, print the form and hand it to the patient during check-in. Users have the ability to utilize the pre-defined paragraphs, or they can create their own.

gMed’s Electronic Health Record system offers integrated applications that are Specialty Specific and Easy to Use for Gastroenterology, Cardiology and Urology practices. The gMed application is CCHIT certified and will allow a practice to collect HITECH and other incentives. With 300 practices, 1,600 workstations and over 2,700 physicians, gMed is the preferred EHR solution for specialty practices.

## HENRY SCHEIN MICROMD EHR & PMS

Henry Schein’s MicroMD group will be on hand to discuss the importance of practices looking beyond the first stage of Meaningful Use and the issues they will face if not addressed during EMR implementation. Such issue to be discussed are: how to prepare staff to recognize new types of data and where data must appear within the electronic record; how to manage internal communications on workflow; how to train staff to properly utilize reporting and analysis functionality; what monitoring activities to implement to ensure providers and other staff members are utilizing the EMR efficiently; and what strategies to employ to assist providers and staff members who are struggling with adoption.

## ISIRONA

iSirona’s software-based solutions can connect virtually any medical device to the hospital’s CIS, providing clinicians with faster access to more accurate patient information without requiring an investment in dedicated connectivity hardware. iSirona’s solutions also help healthcare organizations meet meaningful use requirements for electronic medical records. iSirona’s DeviceConX software supports the communication of vendor-independent, multi-modality patient care device data to enterprise applications using consistent semantics.

IHE is the healthcare IT industry’s largest interoperability testing event, the IHE Connectathon provides healthcare IT companies with a structured environment to test their solutions’ ability to communicate with different IHE profiles. At the 2011 Connectathon, approximately 100 participating organizations tested roughly 200 such profiles.

iSirona booth, #6083 will demonstrate its capability to connect non-network devices like ventilators as part of the exclusive Interoperability Showcase at HIMSS. iSirona passed all interoperability requirements tested at the 12th annual IHE North America Connectathon, held Jan. 7-21 in Chicago.

## LEXMARK

At their booth at HIMSS will be seven Lexmark Healthcare solutions from Admissions (Usage of Digital Pen, Printing Wristbands, Labels and Admissions paper work) to a nurse’s station and scanning pharmacy orders, all the way through to the back office, using solutions like Lexmark Print Release and Print Queue Management.

## M\*MODAL

M\*Modal is showing how EMR vendors and provider organizations are using its innovative Speech Understanding technology to overcome common hurdles to EMR adoption and efficient use, and to help organizations realize the full potential of their EMR technology. They will explain how M\*Modal’s unique combination of speech, natural language processing (NLP) and intelligence technologies is changing the game, and to discuss the company’s latest customer and partner news, including the recently announced partnerships with Geisinger Health Solutions and Precyse.

## MEDICONNECT

MediConnect Global has the most comprehensive, centralized solution that can be customized to achieve accurate reimbursement at a lower cost – RapidRetrieve™ – Medical Record Retrieval. Using RapidRetrieve, a patented online record retrieval system, MediConnect can quickly retrieve large volumes of medical records for health payers, scan and save the records in a uniform digital format, and organize and deliver the records via a central web-based location.

The full benefit of health information is realized when critical data is extracted from medical records in such a way that payers can easily review, analyze, interpret and report on the relevant data. MediConnect's experienced team of medical staff and certified coders can be utilized as a complete data extraction or coding solution, or as a supplement to any current process or team.

#### NUVON

Nuvon will be at this year's HIMSS (booth # 1645) demonstrating capabilities of its VEGA platform and as part of an interactive exhibit in the Interoperability Showcase (booth #7343 in Hall E), where it will demonstrate true interoperability in action in two locations—1) infant incubators and fetal monitors, and 2) ventilators.

That's where Nuvon's ([www.nuvon.com](http://www.nuvon.com)) technology securely captures and transmits biomedical patient device data at the patient's bedside to the EMR and other clinical information systems, solving critical problems that clinicians face every day. Doctors have to know the most recent vital signs of their patients in order to make the right treatment decisions. Bad data, either because it's old or inaccurate, could lead them to make incorrect treatment decisions, possibly even lethal ones. Nuvon has the solution to that problem.

#### PANO LOGIC POWERS CHARTCARE

CharterCARE Reduces Costs/Simplifies Management with Next-Gen Technology. Managing, maintaining and upgrading thousands of computers can be time-consuming and expensive, but not for CharterCARE. CharterCARE implemented desktop virtualization technology from Pano Logic that has no processor, no operating system and no moving parts (they call it a zero client), eliminates endpoint management and security breaches related to HIPAA. CharterCARE is responsible for more than 500 physicians, 55,000 ER visits and nearly 400,000 outpatient visits annually. IT manages 3,500 users across 2,000 PCs and plans to increase infrastructure 30 percent in the next two years. By the end of 2011, CharterCARE will have replaced 750 traditional desktops with Pano Logic.

#### SAGE SOFTWARE

Sage North America recently announced that products developed by its Healthcare Division are now part of the award-winning Sage Partner Advantage program. The Sage Healthcare Division provides electronic health records (EHRs) and practice management software and services to approximately 80,000 physicians in North America.

The launch of the Healthcare Division's channel program is the latest addition to the award-winning Sage Partner Advantage program, which is consistently rated a 5-Star program by EverythingChannel. The program is designed to help channel partners realize greater overall business success

through extensive training in sales, consulting, business leadership and product expertise; hiring assistance; direct financial support and marketing assistance programs. For more information about the Sage Partner Advantage healthcare channel network call 866-693-7067, press option 1.

#### SAJIX

Sajix is based out of Silicon Valley California and operates in many countries and is continuously expanding globally. Sajix mission is "Simplifying Healthcare" by integrating the powers of Information Technology into healthcare services. Alliance partners are Fletcher Flora, Protocol etc, Technology partners like IBM. Sajix has memberships like IHE and HIMSS. The Global healthcare platform is CCHIT certified and provides a fully integrated Medical Information System that allows quick and secure access to the medical records of a patient from anywhere through a web browser.

Hospital Information Systems provide real time data for availability of beds, medicines and other resources, helping in proper work load distribution and management of hospital operations. As all the data is stored electronically, it enables varied options for reporting to regulatory authorities and auditors, efficiently and at a substantially lower cost. For more info contact [info@sajix.com](mailto:info@sajix.com)

#### SOFTWARE AG

Booth (#1779, Hall A/B) Cloud technologies allow more rapid development and more efficient software and services delivery. Software AG will be discussing how to build successful health information exchanges including the delivery of HIEs in a cloud, regional to national connectivity using the NHIN and adopting established financial services models to help automate health care workflows. They will share how the Veterans Administration (VA) and the Department of Defense (DoD) are automating records using the Virtual Lifetime Electronic Record (VLER) architecture, and how it can inform building HIEs today.

#### SOPHOS

Sophos is showing Sophos Mobile Control, the Company's extension to its data protection and endpoint security product lines. A steady surge in smartphone adoption poses a new set of challenges for businesses as the workforce wants constant connectivity from their individual devices, going beyond what is company-issued. Smartphone security is the leading concern among IT executives according to recent Forrester research. Of those IT executives polled, 75 percent said that they were either concerned or very concerned about the security risks associated with the adoption of these devices and up to 40 percent allow or support Windows Mobile, the iPhone, and Pads. Further, approximately 150 million people in the US will be using smartphones by the middle of this year to perform social and personal functions, according to the Nielsen Company.

With this new offering, Sophos addresses a major pain point for businesses by safeguarding data on a broad range of popular smartphones and handheld devices, including Apple iPhones and iPads, Google Android, and Windows Mobile devices. Sophos Mobile Control provides comprehensive mobile device management, enabling the ability to simply and quickly secure, monitor, and control the configuration of these devices connecting to the corporate network, allowing similar levels of control and protection with company laptops and desktops. Sophos provides businesses a comprehensive threat and data protection shield, while reducing complexity and burden to IT administrators and end users. Sophos Mobile Control was designed for IT administrators to simply and quickly secure, monitor, and control the configuration for smartphones running iOS, Android, and Windows Mobile operating systems, Sophos Mobile Control web-based console:

- Secures mobile devices by centrally configuring security settings, enabling lock-down of unwanted features and remote over-the-air lock or wipe if device is lost or stolen;
- Enables consistent security policy enforcement, strong password policy and lock period, control and installation of applications, blocking use of cameras, browsers, and the likes of YouTube;
- Eliminates administrative burden with a self-service portal that allows end users to register new devices and lock or wipe lost phones;
- Controls the access to corporate email via a secure gate allowing only properly secured and registered devices to access email.

### SRSsOFT

SRS is the recognized leader in productivity-enhancing EMR technology and services for high-performance orthopaedic practices—with the largest national network of orthopaedists successfully using an EMR. Offered via the Unified Desktop™, the robust SRS Hybrid EMR, SRS CareTracker PM, and SRS PACS increase speed, free physicians' time, boost revenue, and heighten patient satisfaction. Prominent orthopaedic groups overwhelmingly choose SRS because of its unique fit with the demands of their specialty.

### SUITEMED

SuiteMed IMS™ is an intuitive, integrated, certified EHR/PM solution used by the solo physician and small practice nationwide for over 12 years. It can be deployed in the office (client server) or web hosted environment and you can expect local personal attention, support, training and individualized services that a large corporation just can't offer. SuiteMed IMS enables the physician to speed up the data entry process through click minimization with features like specialty specific templates, single screen chart review, e-prescribing, order creation and tracking, messaging, transcription sign on/off and test result sign on/off. Access digital

patient charts from a system that can be deployed in a client server or web hosted environment, for anywhere, anytime access so you can start making real-time clinical decisions based on accurate and complete information. Improve the level of patient care while increasing productivity.

### SUNQUEST

Sunquest Business Intelligence Solutions™, provides real-time, dashboard-driven meaningful operational and clinical metrics, as well as the Integrated Clinical Environment (ICE) Physician Portal™ that will enhance physician and patient affinity to laboratories by enabling community interoperability. Sunquest products include ICE PP and BI Software Solutions. For more information call +1-520-570-2114.

### VERSASUITE

VersaSuite is an enterprise strength electronic health record and practice management system that accommodates any size organization and all medical disciplines. It provides a flexible eHR Solution, allowing the clinician to capture and recall patient information whether it is in text, image, audio, or video formats. VersaSuite eHR can be interfaced with other medical instruments, enabling it to directly import information into the patient electronic health record.

The powerful template editor creates and customizes data capture forms by a simple drag and drop utility. This gives VersaSuite eHR a unique advantage of being able to adapt to the clinician, rather than forcing the healthcare provider to change routines to follow boilerplate exam templates. Referral letters are quickly produced and customized directly from the patient clinical record. The correspondence can be printed, faxed, emailed, or merged with Word. Advanced features like sophisticated drawing tools and on the fly data graphing allow for accurate review of significant findings.

The data mining capability can identify patient populations with certain common attributes. The side-by-side comparison of the current and historical data and images provides a complete perspective and defines trends. VersaSuite-eHR is a paperless solution for the modern medical practice. For more information call 800-903-8774 or email sales@versasuite.com.

### VITAL HEALTH

VitalHealth Software (booth #1721) will be introducing its forthcoming EHR for small practices designed with the Mayo Clinic Center for Innovation. The VitalHealth EHR -scheduled for general release this spring -promises to be a significant addition to the EHR landscape. The company will discuss VitalHealth's recent collaboration with Mayo Medical Laboratories (MML) in which MML will offer the VitalHealth EHR as part of its outreach solution.

## Christian Faith & Healing – My Story

It's been a while since I wrote a piece on how faith enhances physical healing, but my own broken humerus provides a perfectly wonderful opportunity to explain how anointing with oil and prayer through faith in Jesus, made a real difference in my physical healing.

On October 25th, I had the unfortunate experience of slipping on wet leaves while running in my back yard. My right legs flew out from under me, and I fell with my full body weight (and I'm a big guy) on my right arm and shoulder and then plowed along on the ground for a couple of feet.

When I stopped, everything hurt. The rush of pain made it very clear there was a broken bone and other damage. I didn't try to move, but just laid there taking inventory of what hurt and didn't, what worked and didn't and how I could actually get up and move with as little additional pain as possible.

Ultimately, I made my way back into the house and phoned my wife who is a nurse, for help. That led to an unscheduled visit to an excellent orthopedic surgeon who specialized in upper arm and shoulder fractures, which was my problem. The x-rays were very painful, as they moved my now limp arm and body around into positions to get the pictures. The x-ray showed two fractures.

That was clarified by a follow-up CT Scan later that day, also an uncomfortable experience, even with my arm now in a sling (since it couldn't be cast that close to the shoulder socket). A day later, less than 12 hours before a scheduled departure for Hawaii for a family vacation, I sat in the surgeon's office to discover if my next trip was to Hawaii or on a gurney to surgery to insert a plate and screws to connect the three broken parts back together.

Because the CT showed "right, proximal, humerus fracture with extensive ecchymosis and swelling of the right upper extremity...from the greater

tuberosity with only minimal displacement, and the surgical neck fracture allowed the humerus head to remain well-centered in the glenoid," I was allowed to go to Hawaii, with the sling, some Percocet, and instructions to start pendulum and rotational maneuvers on the following Monday (just 2 weeks after the initial fracture).

Before we left, my wife anointed my arm with anointing oil, prayed over it in Jesus' name, and others in our church began to pray for my healing. My arm was now mostly black from the shoulder to below the elbow and over the next few days became black all the way down to my wrist. Pain was minimal with use of 2-3 Percocet daily. Sleeping was problematic and for several nights I slept seated upright in a chair with the arm in the sling on pillows. Healing began immediately and by the following Monday (at 2 weeks) I did start the therapy motions, as directed. They were easier than expected and without pain, even when I bent over somewhat to rotate the arm further from my body.

I wrote mostly by using Dragon Naturally Speaking Preferred V11 by moving the mouse to the left of the keyboard. Within a couple of days I could rest my forearm on the keyboard, and type with my fingers, but not yet move it across the keyboard or to a mouse position. During the vacation much healing was occurring, to the amazement of my wife and daughter (who at 8 weeks earlier had her own forearm fracture in two places).

The morning after returning to NJ on November 10th, my follow-up visit included another x-ray. It showed the bones were in the exact same position and were healing. The doctor said smiling, "They hadn't moved a bit." I told him about the movement Jesus had restored and then demonstrated it. He then put his arm under my elbow and gently lifted it upward, until the elbow was raised above horizontal, which surprised him. Next he put his forearm against the wall and crawled it upward

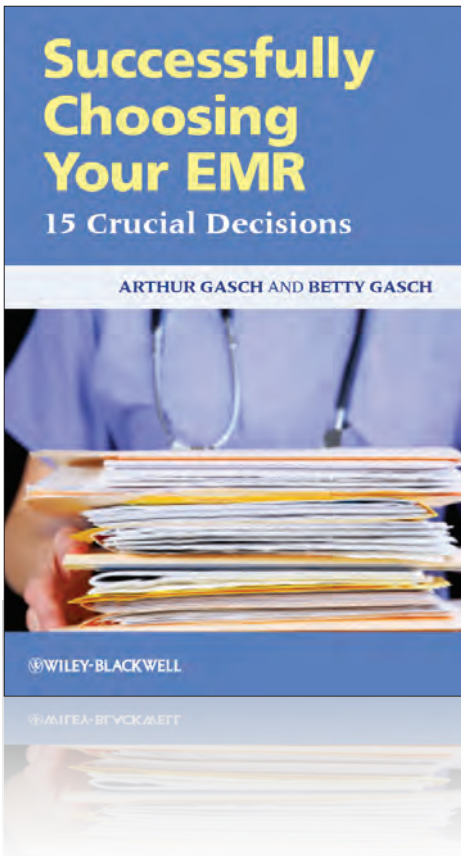
with his fingers until his arm was fully extended upward over his head. He asked me to do the same as much as was comfortable. I reached about 60% extension with my left arm. That was my new exercise.

Within 2 days I was extending my right (healing) arm upward to within 1/2 inch of where my left arm could reach (up over my head, over the door frame), without significant pain. Full vertical extension had been restored. I could rotate my forearm up and down, rotate the wrist more than 180 degrees, and move the upper arm from the elbow in forwards or backwards. This was at 3.5 weeks after the fractures without any physical therapy yet.

I have no great strength, nor am I pushing it, but I can wash my hands, dress, shower, shave (with my right hand), type and move my arm on and off of the mouse, use the phone – all without pain or help. The healing we prayed for was not instantaneous (although I have seen that happen to others), but had been accelerated. I thank the Lord for that each day as I am resuming more of my daily activities less than 4 weeks after this double fracture. My next visit was just before Thanksgiving, when we discussed actual physical therapy. The doctor did not take but a few minutes of examination to pronounce that he would not be sending me for therapy!

This doesn't seem to be normal healing to my MD who specializes in these types of breaks, so it's pretty clear something else was involved. You are free to draw your own conclusion. Perhaps you think I am "lucky" or don't think the healing described is unusual for someone in their sixties, but I know that Jesus still answers prayers for healing today, and I'm glad He does. All the medical evidence is there – God heals. Something to ponder, and questions are welcomed.  $\Delta$

Arthur Gasch  
*Founder, Medical Strategic Planning.*  
*Publisher.*



## Successfully Choosing Your EMR: 15 Crucial Decisions

The Electronic Medical Record (EMR) is the essential underpinning of any significant healthcare reform. This book clarifies the Crucial Decisions that result in successful EMR adoption and avoidance of expensive EMR mistakes. It provides timely insight in leveraging ARRA/HITECH, Meaningful Use, Stark Safe Harbor, CPOE and PQRI incentives and understanding current HITSP, HL7, ASTM, ELINCS and other interoperability standards.

### This book provides practical-guidance on:

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- Deciding which user-interface approach to adopt;
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