

Incremental CPOE

The Digital Hospital of the Future

Incremental CPOE

White Paper

By Mark Anderson, CPHIMS, FHIMSS
CEO and Healthcare IT Futurist
AC Group, Inc.
118 Lyndsey Drive
Montgomery, TX 77316
281-413-5572
mra@acgroup.org

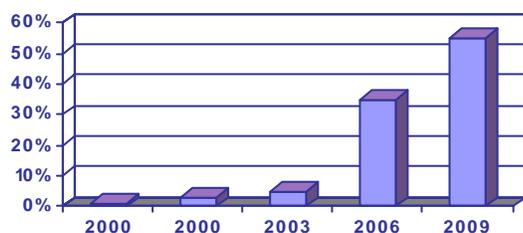
Tuesday, January 22, 2008

Incremental CPOE

Healthcare organizations that embrace an incremental approach towards CPOE will reduce adaptation barriers that exist today and will succeed in the future. Organizations that follow the current trend towards “Leaping” into CPOE may experience obstacles which could result in failure and will not benefit from the perceived enhancements that are promised by many healthcare leaders.

If you listen to leaders in the healthcare vendor and consulting field, they are predicting that healthcare organizations are going to “Leap” onto the patient safety and CPOE initiative. They will tell you that “A big agenda item for most hospitals in the U.S. is implementing computerized physician order entry (CPOE) for inpatients”. Based on current projections, the industry predicts that over 50% of the hospitals will have installed some component of inpatient CPOE by 2009. (Figure 1)

% of Hospitals w/CPOE



Of course, this belief stems from the endorsement of CPOE in the 1999 Institute of Medicine report *To Err is Human*. This belief has been reinforced by industry leaders from The Leapfrog Group and California Senate Bill 1875 which calls for a medication error reduction strategy in hospitals that includes the use of technology such as CPOE. Why? Because these groups estimate that CPOE can improve the quality of care and reduce serious medical errors by more than 50 percent. They believe patient safety equals quality and financial value - not just for employers, but for providers, consumers and payers of care as well. Even with this push, only a very small percentage of hospitals in the U.S. have CPOE in place. This means that most are looking at options for adding or enhancing clinical systems supporting inpatient care and successfully implementing tools such as CPOE

With the push towards patient safety initiatives, many healthcare professionals are concentrating their IT decisions around clinical applications. As we saw in the HIMSS 2002 annual survey, 4 of the top 5 healthcare applications deemed most important over the next two years related to enterprise-wide, mission-critical clinical applications. These applications include Point-of-Care Clinical Decision Support, Clinical Information Systems, Clinical Data Repository, Computer-Based Patient Records, Radiology Picture Archiving Communication Systems (PACS), and Computerized Physician Order Entry (CPOE) Systems.

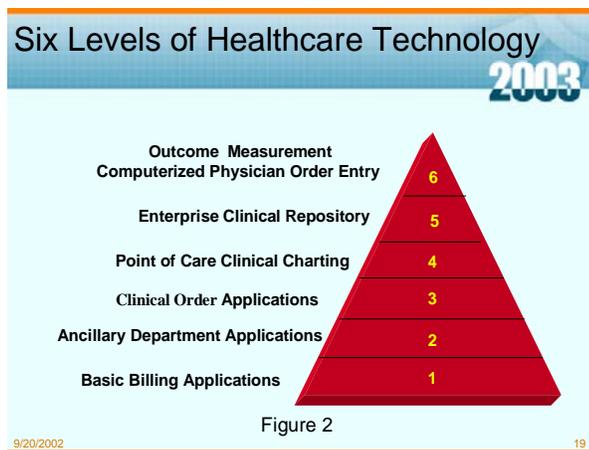
California Senate Bill 1875 requires health facilities and clinics (including general acute care hospitals, specialty hospitals, and surgical clinics, but excluding small and rural hospitals) to implement a formal plan to eliminate or substantially reduce medication-related errors by 2005. (www.leginfo.ca.gov/bilinfo)

During 2002, most organizations switched their clinical priorities from point-of-care clinical information systems (CIS) to CPOE. More specifically, the current industry focus is on *inpatient* CPOE, and the term generally refers to electronic ordering for hospitalized patients. So why has the industry concentrated on Inpatient CPOE? The answer could be as simple asmoney.

WHAT IS CPOE? Most consider CPOE to be a clinical software application designed specifically for use by physicians to write patient orders electronically rather than on paper. To benefit from CPOE, an organization will require knowledge-based clinical decision support systems that provide guidance and knowledge to assist the physician in entering complete, accurate, and appropriate patient care orders. These knowledge-based systems must also provide interactive clinical alerts that notify physicians when new information is available that identifies a change in the patient's clinical condition.

Incremental CPOE

However, without a core clinical information system for clinical documentation by the entire clinical staff, CPOE is like a car without an engine. It may look good, but it will not get you where you want to go. As described in the Six Levels of Healthcare Technology, point of care clinical charting applications are the foundation to enterprise clinical repositories and CPOE. (Figure 2).



According to Mr. Mark Anderson, a noted healthcare futurist, “successful organizations have taken an incremental approach towards building their healthcare IT infrastructure. Each level of technology is dependant on the previous level”. During his 30 years in healthcare, Mr. Anderson has found that over 70% of the applications that have failed occurred when an organization “leaped” ahead of one technology level before they had fully transitioned the organization from the prior technology level. The best example of this occurred during the mid 1990’s when healthcare organizations attempted to create Community Health Information Networks (CHINs). Part of the reason these systems failed was because the organization tried to leap ahead with technology without insuring that the core infrastructure was in place and operating effectively.

But where do they turn for knowledge and direction? From the vendors and consultants that profit from selling to these same organizations? Actually, the answer maybe.... “YES”. Many of the leading healthcare application vendors are providing leadership and directions towards improving care. These vendors see the benefit of creating a knowledge-based system where errors can be identified, tracked, and reduced through the use of extensive knowledge based system.

But where does a hospital start?

The incremental approach towards CPOE should start in the clinical areas that have the highest cost and the highest clinical acuity – the critical care units. If you consider the cost and complexity of care, the critical care unit represents the bulk of clinical activity per patient day, and they represent the greatest opportunity for clinical outcomes. For example, a recent study conducted by AC Group showed that the average hospital could save as much as \$50,000 per year per bed in the critical care units if clinical documentation was implemented and used by 80% of the clinicians.

CIS Applications

- Collects and monitors physiologic and other patient-related data from on-line monitors,
- Provides composite views of patient status, physiologic condition, and diagnosis and treatment.
- Incorporates all aspects of case management, care planning, outcomes’ measurement, resource and variance analysis and automatic order integration into one tool for efficient and cost-effective management of the patient care process.

To create this potential savings, organizations must have a clinical foundation including integrated clinical documentation and coordinated order management systems installed and operating within the facility. Leaping directly into CPOE within this foundation creates a gap in clinical documentation and reporting. For example, if clinical vital signs and nursing notes are not available to the physician at the right time and the right place, clinical

knowledge will be missing and a given clinical order may not be appropriate at the time it is ordered. CPOE applications are designed to help the physician by making available relevant patient information as he/she writes orders and by providing prompts and alerts based on rules-based logic. How can this be accomplished if clinical data is not available because a healthcare organization has not installed a CIS? Additionally, the clinical decision support (CDS) tools of the CPOE application can only provide real-time assistance if clinical data is available electronically. Most assume that CPOE applications will be linked with other applications and databases that provide the needed patient information and facilitate delivery of the ordered interventions, such as admitting, nursing, and pharmacy systems, applications for other ancillary services, etc. But how many hospitals have core clinical applications installed? Very few at last count.

Incremental CPOE

Where are we today?

So, if CIS is a foundation for CPOE, how prepared are the nation's hospitals for CPOE? Based on the 2007 HIMSS survey, only 38% of the U.S. hospitals today have an application designed for non-physicians (often nurses, ward clerks, and/or pharmacists) to enter orders electronically from the physician's written orders in the patient chart.

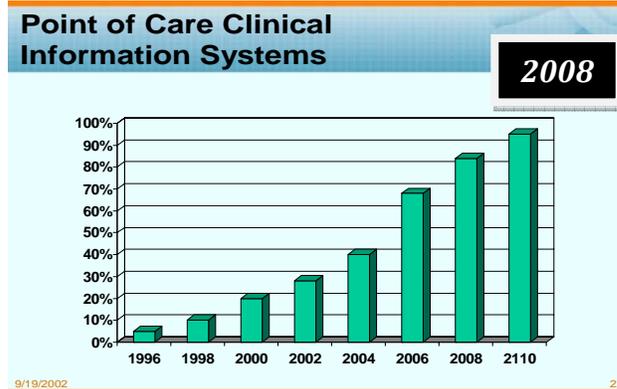
Where are we today?

- ❖ 38% have fully operational projects, up from 10% in 2000.
- ❖ 62% have begun a CIS implementation
- ❖ 58% have developed CIS Implementation plans, up from 37% in 2000.
- ❖ 41% are currently evaluation a CIS. Up from 11% in 1998.
- ❖ 28% have no plans for a CIS, up from 24% in 1998

The progress towards integrated clinical systems for many hospital/integrated delivery networks (IDNs) CIO's is slow because they are finding it difficult to win executive management support for multimillion-dollar investments in strategic CPOE and patient Clinical Information Systems (CIS). The main reason is the current inability to show tangible, quantitative "hard dollar" ROI. As a consequence of automating documentation related to the patient care process, the CIS provides the infrastructure and is the initial building block for the CPOE.

Once hospitals understand the benefits of an incremental approach towards CPOE and the benefits of creating a foundation for CPOE in the form of a CIS, the faster the healthcare industry will benefit from the automation of knowledge-based clinical decision support systems. We already know that CIS application can be cost justified (CIS ROI – A Financial Model – a presentation at the TEPR 2007 Conference). Now we must start embracing CIS so that we can begin our migration towards knowledge-based CPOE.

Given that CIS is the foundation for CPOE, we predict that CIS installations will grow steadily over the next four years. Based on present projects and the HIMSS 2007 survey, we estimate that over 60% of the hospitals will have an enterprise wide CIS application installed and operating by 2008.



However, to effectively implement Clinical and CPOE applications, the clinical community must be assured that the application will be available and reliable 24 x 7 x 365. To accomplish this, the healthcare professional MUST insure that the vendor can guarantee an adequate technology and application "uptime", especially with CIS and CPOE applications. Not so many years ago, back-office financial IT systems could be down for hours or even days and the organization could remain in business. Storage systems could be repaired, maintained and upgraded overnight or on the weekend without harm to the healthcare organization. Today, however, the healthcare enterprise is highly dependent on immediate access to real-time clinical data from the interrelated computing and networking systems. Scheduled downtime has gone the way of the horse-and-buggy.

CASE Study:

In 2002, Dr. Mike McCoy at UCLA Medical Center decided to invest his resources in upgrading and expanding the clinical information systems (CIS) provided by CliniComp, Int'l. Instead of "leaping" into CPOE, Dr. McCoy made sure that his CIS was enhanced and in place throughout UCLA's 1000-plus beds. Dr. McCoy sees the value of a CIS strategy prior to a CPOE implementation in order to ensure a successful CPPOE implementation when it takes place. Other organizations, like Sharp Healthcare in San Diego, have taken a similar approach. Sharp Healthcare embarked on a strategy to implement a full complement of clinical systems provided by CliniComp, Int'l. of San Diego prior to their installation of a hospital-wide CPOE. Both UCLA and Sharp see the value of computerizing their clinical areas prior to introducing order entry to their physicians.

Incremental CPOE

Conclusion:

CPOE without a hospital-wide or, at the very least, a Critical Care CIS will not produce a success in most, if not all, all organizations. "Leaping" into CPOE without an investment in the clinical infrastructure will be met with minimal, opr no, success. Implement CIS in critical care, L&D, ED, Med/Surg, etc. and you will have gone a long way toward a successful CPOE implementation. And, hospital-wide acceptance. At the end of the day, isn't that what it is all about?

Incremental CPOE

More about the Author:



Mark R. Anderson, CPHIMS, FHIMSS
CEO and Healthcare IT Futurist
AC Group, Inc.

e-mail: mark.anderson@acgroup.org

Mr. Anderson is one of the nation's premier IT research futurists dedicated to health care. He is one of the leading national speakers on healthcare and physician practices and has spoken at more than 350 conferences and meetings since 2000. He has spent the last 30+ years focusing on Healthcare – not just technology questions, but strategic, policy, and organizational considerations. He tracks industry trends, conducts member surveys and case studies, assesses best practices, and performs benchmarking studies.

Besides serving at the CEO of AC Group, Mr. Anderson served as the interim CIO for the Taconic IPA in 2004-05 (a 500 practice, 2,300+ physician IPA located in upper New York). Prior to joining AC Group, Inc. in February of 2000, Mr. Anderson was the worldwide head and VP of healthcare for META Group, Inc., the Chief Information Officer (CIO) with West Tennessee Healthcare, the Corporate CIO for the Sisters of Charity of Nazareth Health System, the Corporate Internal IT Consultant with the Sisters of Providence (SOP) Hospitals, and the Executive Director for Management Services for Denver Health and Hospitals and Harris County Hospital District.

His experience **includes 32+ years working with Healthcare organizations, 20+ years working with physician offices, 7 years in the development of physician-based MSO's**, 17 years with multi-facility Health Care organizations, 15 years Administrative Executive Team experience, 6 years as a member of the Corporate Executive Team, and 9 years in healthcare turnaround consulting. Mr. Anderson received his BS in Business, is completing his MBA in Health Care Administration, and is a Fellow with HIMSS. Additionally, he serves on numerous healthcare advisory positions and has developed programs including:

- Developer of the Six-levels of Healthcare IT for Hospitals and the Physician Office
- Researcher and producer of the 2002-2008 PMS/EHR Functional rating system
- Advisory Board and Content Chairman – Future Healthcare, 2007-08
- Advisory Board and Content Chairman – Physician and Hospital Bonding Summit, 2008
- Advisory Board and Content Chairman - Healthcare IT Outsourcing Summit, 2002-08
- Advisory Board and Content Chairman - Patient Safety and CPOE Summit, 2002-06
- Advisory Board and Content Chairman – Consumer Driven Healthcare Conference, 2003, 2004
- Advisory Board and CPOE Chairman - Reducing Medication Errors, 2003, 2004, 2005
- Advisory Board of TETHIC 2003, 2004, 2005
- Advisory Board of NMHCC 2000, 2001, 2002, 2003, 2004, 2005
- Advisory Board of TCBI Healthcare Conference 2000 - 08
- Advisory Board of TEPR and MRI, 2000-08
- Past President of Local HIMSS Boards – Houston, Tennessee, Southwest TX
- Editorial Board of Healthcare Informatics 2001 - 06
- Judge, MSHUG ISA, 1999-2005, TEPR Awards, 2001-2002, TETHIE 2003-05, HDSC 2003-05
- National HIMSS Chapters Committee 2001 - 04
- National HIMSS Fellows Committee 2001, 2002, 2004
- National HIMSS Programs Workgroup Committee 2001, 2002, 2003, 2004, 2007
- Chair HIMSS HIE Education Task Force - 2007-08
- Member of HIMSS RHIO Best Practices - 2007-08

More about AC Group:

AC Group, Inc. (ACG), formed in 1996, is a healthcare technology advisory and research firm designed to save participants precious time and resources in their technology decision-making. AC Group is one of the leading companies, specializing in the evaluation, selection, and ranking of vendors in the PMS/EMR/EHR healthcare marketplace. Twice per year, AC Group publishes a detailed report on vendor PMS/EHR functional, usability, and company viability. This evaluation decision tool has been used by more than 5,000 physicians since 2002. Additionally, AC Group has conducted more than 200 PMS/EHR searches, selections, and contract negotiations for small physician offices to large IPA since 2003.

More than 500 healthcare organizations worldwide have approached their most critical IT challenges with the help of trusted advisors from ACG. Since 1972, ACG advisors have been helping healthcare professionals make better strategic and tactical decisions. This unmatched combination of market research and real-world healthcare assessment gives clients the tools they need to eliminate wasteful technology spending, avoid the inefficiency of trial and error, and discover a superior alternative to "guess" decisions. For our healthcare physician clients, ACG provides independent advisory and consultative services designed to assist physicians in evaluating and selecting technology to enable the creation of the "The Digital Medical Office of the Future".