

# Computerized Physician Order Entry Usage in North America: The Doctor Is In

Stacilee Oakes Whiting and Adam Gale

While computerized physician order entry (CPOE) is still in its infancy as far as adoption goes (<10% of North American hospitals have implemented CPOE), most organizations are planning to utilize CPOE in the future. However, one of the major questions on most hospitals' minds is, "Will physicians accept and use CPOE?"

Recently, KLAS set out to discover what progress has been made in CPOE penetration and physician usage. The 2008 CPOE study is the sixth annual report of its kind and details the state of CPOE in North American hospitals.

Among the findings are the percentage and depth of CPOE usage, the methods hospitals now employ to increase CPOE use and what successes and difficulties organizations have encountered with their CPOE initiatives. According to providers, the doctor is in and CPOE usage is growing.

## Aggressive Usage at CPOE Sites

Compared to past years' studies, the 2008 KLAS study found more aggressive CPOE usage in organizations that are live with CPOE. Of the 472 American hospitals live with CPOE, 295 (63%) had over 50% of potential orders entered by physicians. Currently, KLAS considers 50% of orders entered into CPOE

to be aggressive CPOE usage. Therefore, a majority of CPOE hospitals have now achieved aggressive physician usage.

Of course, there is still much work to be done. Table 1 illustrates the state of CPOE usage as discovered in this year's study. "Deep" usage is defined as 86–100% of orders filled out in CPOE, "significant" usage is defined as 51–85%, "moderate" is defined as 16–50% and "pilot" is 1–15%.

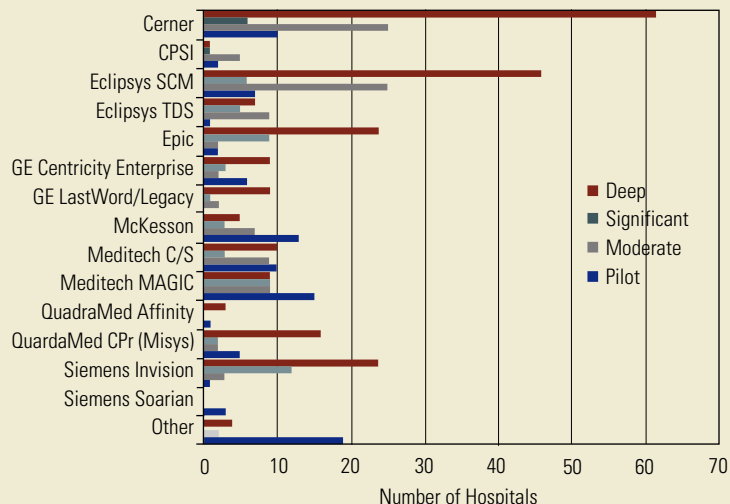
As noted below, over 200 organizations have achieved deep usage of CPOE. The hope is that organizations in the "moderate" category can move to "significant" usage within the next year and so on.

In in-patient settings, deep usage is leading the way for most commercial vendors and products, as detailed in Figure 1. However, there are five vendors/products for which this is not true: CPSI, Eclipsys TDS, McKesson, Meditech MAGIC and

Table 1. Number of organizations using CPOE

	Pilot	Moderate	Significant	Deep
Overall	95	102	60	229

**Figure 1. Use of computerized physician order entry by physicians (in-patient) by number of hospitals**



expected), in-patient usage is rising and beginning to close the gaps (Figure 2).

**Voluntary versus Mandated Adoption**

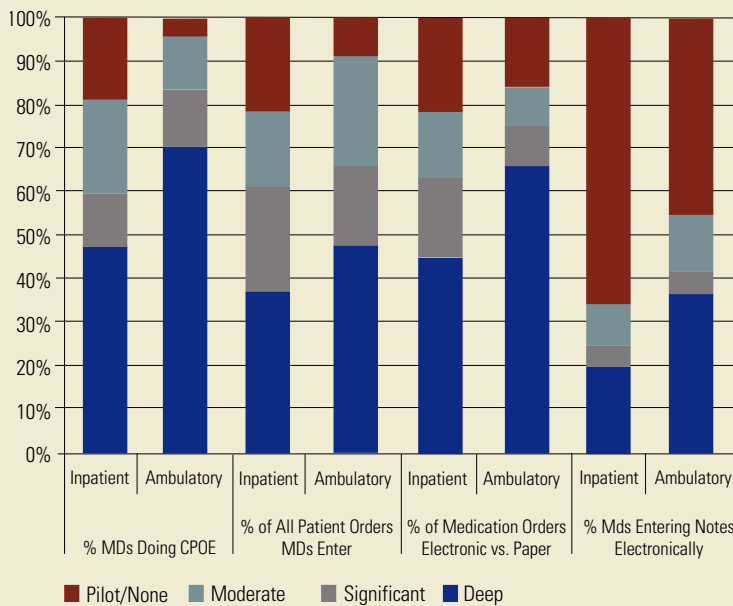
One would logically ask, “Does physician usage success come from voluntary adoption or mandated adoption of CPOE – or to what extent does either approach make a difference?” In KLAS’ study, it became clear that while mandated CPOE usage may not seem desirable, it does significantly impact physician usage statistics.

Figure 3 represents the percent of physicians doing CPOE segmented by whether or not CPOE usage was mandated.

KLAS found the percent of those mandating CPOE rose 7% this year. This is in addition to the 62% that already mandate CPOE because they are a teaching organization and 32% that already mandate CPOE usage for non-employed physicians. Part of the mandate approach at some organizations stems from those who started with voluntary usage and now want to win the laggards.

The truth is that mandating physician CPOE usage improves adoption almost two to one. Figure 4 shows the percent of physicians doing at least some CPOE by vendor. All vendors with less than 66% usage, with the exception of Meditech, had no organizations that mandated CPOE. Meditech, on the other hand, despite having the highest percent of organizations that mandated CPOE of all vendors, still shows low usage.

**Figure 2. Use of CPOE in in-patient and ambulatory settings (N = 303)**



**Problems and Lessons Learned**

Regardless of whether a hospital has mandated CPOE usage or not, problems are encountered. Study respondents shared their views of the top problems and then some advice and lessons learned.

**Re-entering Data in Pharmacy**

Pharmacy integration is still a work in progress. Only providers with four vendor products report no re-entry: Epic, QuadraMed Affinity, QuadraMed CPR (Misys) and Siemens Soarian.

Siemens Soarian. Of those five products, two are legacy systems. All five products have a higher number of hospitals in “pilot” or “moderate” status than any other status.

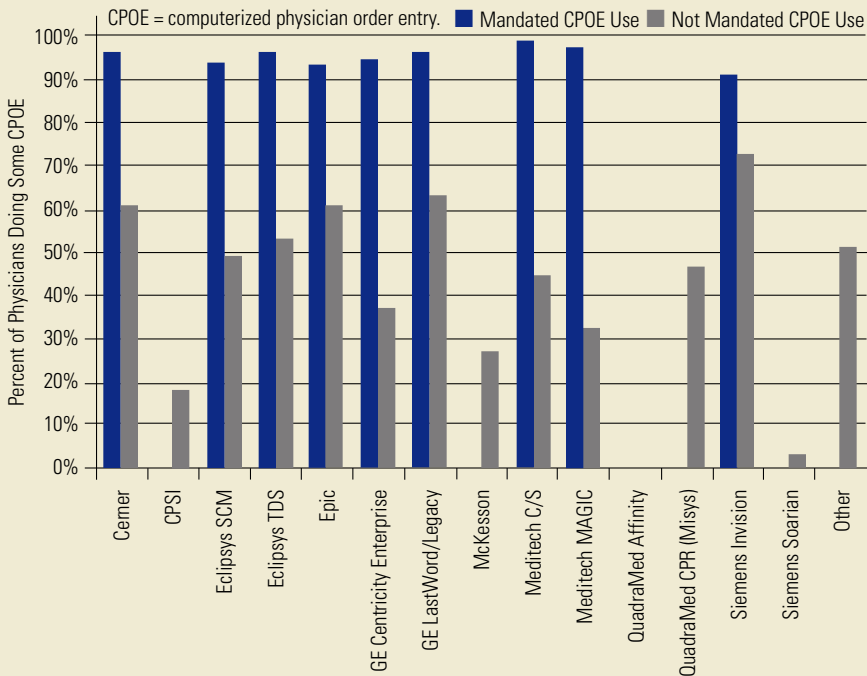
When comparing use in in-patient and ambulatory settings, differences in physician usage appear as one would expect. However, while ambulatory usage is higher (as would be

In 2003, the average number of data sets being re-entered was 48%, whereas in 2008 it is 21%.

**Interfaces**

Interfaces, by their very nature, increase complexity and limit the exchange between systems to the lowest common denomi-

**Figure 3. Percent of physicians doing some in-patient CPOEs by vendor**

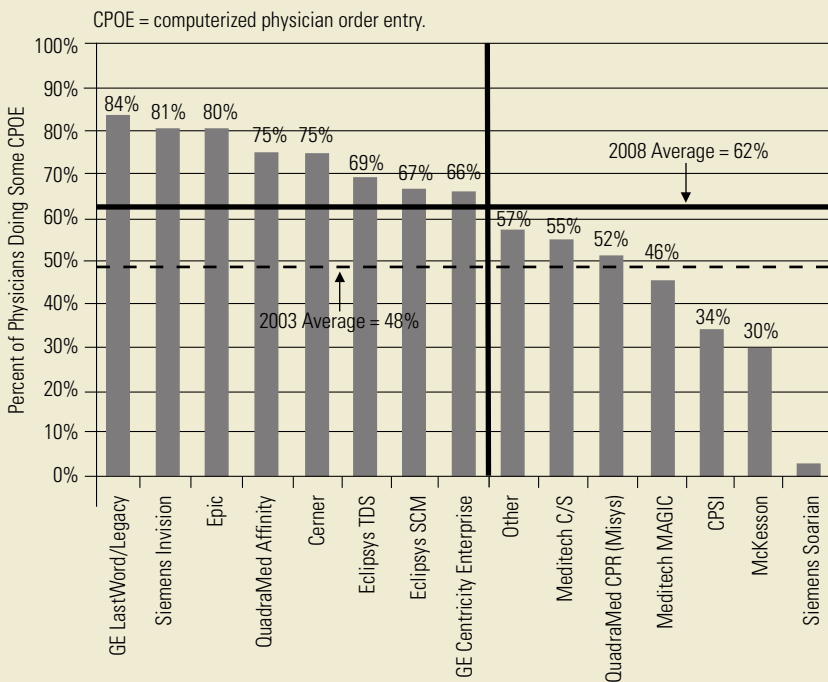


nator. There are some that suggest CPOE would be better described and thought about as “closed loop medication ordering.” Clearly interfaces are a challenge if your goal is integration amongst CPOE, pharmacy automation, closed loop medication administration with BPOC and nursing eMAR and pharmacy robotics.

**Alerts**

Progress with alerting continues to be elusive. It is disappointing to witness the decline in complex rules-based alerting at the time of CPOE in the in-patient environment. Of the 14 vendor products measured, only four recorded increases in complex, rules-based alerting at time of in-patient CPOE. Rules-based alerting on the ambulatory side, however, is increasing; and the increase is meaningful, jumping from 44% last year to 63% this year.

**Figure 4. CPOE adoption comparing mandated versus not mandated usage (N = 303)**



**Order Entry Times**

The biggest challenge and complaint from physicians is that it takes longer to enter an order electronically; hence today’s focus and attention from providers and vendors alike on workflows, order sets, pharmacy integration and devices, along with the need for physician champions, executive involvement and fortitude. Despite the challenges, one provider summarized, “Clinically, this is the right thing to do for the patient.”

**Device Selection**

Device selection and placement require due diligence both from a physician perspective as well as the technology behind it. Approach this with caution. One provider explains, “We have computers in every patient’s room, and they

never get turned on ... The doctors don't want to do their documentation in the room with the patient."

**Lessons Learned**

When asked about what lessons they had learned from their CPOE initiative, providers quite often mentioned workflows and order sets (31%) as something they wished they had outlined extensively. Providers explained that one needs to do more than just define the workflow/order set. Those who reported the most success had made progress in evidence-based medicine (which requires significant clinician buy-in) and those who avoided too many defaults that initiated unnecessary tests or charge – yet flowed enough for physicians.

In addition, respondents often expressed the need for physician/nurse champions (29%) to lead the cause for CPOE usage. Study participants often reported they didn't realize how much nursing relies on a piece of paper and verbal physician communication in order to take action. Using nurse champions in addition to physician champions may alleviate some of the problems inherent in changing the impetus for action.

Other common lessons learned were concerning the need for clinician/nurse adoption and buy-in (19%), communication between departments (16%) and a good training plan (16%).

**The Good News**

The good news is that CPOE usage is rising, so the doctor is definitely in – at least the majority of the time. As more physicians are encouraged to use CPOE and more hospitals begin to go live, patient errors will continue to decrease. The crucial step most organizations need to take now is to determine their CPOE expectations, find the vendor that best fits their needs and benefit from the lessons learned by other CPOE sites. Soon enough, the doctor will be in and using CPOE at your site.

**About the Authors**

**Stacilee Oakes Whiting** is the manager of corporate publishing for KLAS, Orem, Utah.

**Adam Gale** is Chief Operating Officer at KLAS Enterprises. For more on the CPOE study, visit [www.healthcomputing.com](http://www.healthcomputing.com).

**About KLAS**

KLAS, founded in 1996, is the only research and consulting firm specializing in monitoring and reporting the performance of healthcare's information technology (HIT) vendors and products. Our senior management staff and advisory board average 25 years of healthcare information technology experience.

**How We Serve the Healthcare Industry:** KLAS, in concert with thousands of healthcare executives, CIOs, directors, managers and clinicians, has created a dynamic database of information about the performance of HIT vendors. The KLAS database represents the opinions of healthcare executives, managers and clinicians from over 4,500 hospitals and 2,500 clinics on more than 750 different products. The information is continually refreshed with new performance evaluations and interviews daily.

The KLAS database is dynamically and effectively used by:

- Healthcare organizations, to align expectations with a vendor's actual performance, to assist in strategic planning and contract negotiations and to validate decision processes
- Vendors, to monitor their performance in comparison with competitors
- Consultants, for current performance information on a specific company or product
- Healthcare investment firms, to evaluate publicly traded HIT company performance and trends or the competition for a new entrant.



*Nursing in the NWT*

Photo by W. Weber, GNWT

**Experience that lasts a *lifetime!***

If you are a nurse with a desire to work where your skills and experience can truly make a difference, the Northwest Territories offers unique and rewarding opportunities.

**We have opportunities for nurses in:**

- ER
- ICU
- OR
- Obstetrics
- Acute Care
- Public Health
- Community Health (outpost)
- Relief Positions

and for **Nurse Managers** and **Nurse Practitioners**

The Government of the Northwest Territories offers competitive salaries, and all positions include a generous Northern Living Allowance and benefits package including licensing fees and full relocation costs.

To see current job postings, visit our website: [www.hlthss.gov.nt.ca](http://www.hlthss.gov.nt.ca)

For more information contact:  
**Recruitment Officer**  
**Toll free: 1-877-241-9357**  
**Fax (867) 873-0634**  
**E-mail: [hlthss\\_recruitment@gov.nt.ca](mailto:hlthss_recruitment@gov.nt.ca)**



Northwest Territories Health and Social Services



Careers that Make a Difference

NL1004

## Available Online Only

www.electronichealthcare.net

### Listowel – An EHR Success Story

Rob Annis, Brent Boshart and June K. Williamson

Listowel Memorial Hospital has successfully implemented a community-wide Electronic Health Record with linkages to the community hospital, family health team, laboratories, and other regulated health professionals. This case study describes the journey to success along with the factors that were critical in its implementation.

### A National Education Strategy to Develop Nursing Informatics Competencies

Marilynne Hebert

Advances in the sophistication of information and communication technologies offer nursing practitioners opportunities for better information management, more complete documentation of their work and knowledge development to support evidence-based nursing practice. However, a nursing culture that recognizes and adopts the contributions of technology to practice is required to take advantage of these opportunities. The nature of this change suggests a shift in emphasis from specialists in Nursing Informatics (NI) to NI being integrated into all four domains of nursing practice. The magnitude of change required on individual, organizational and professional levels points to the need for Nursing Informatics education strategies on a national level. Recognizing the role and history of NI specialists, defining

NI and the required NI competencies are necessary first steps in developing such a plan.

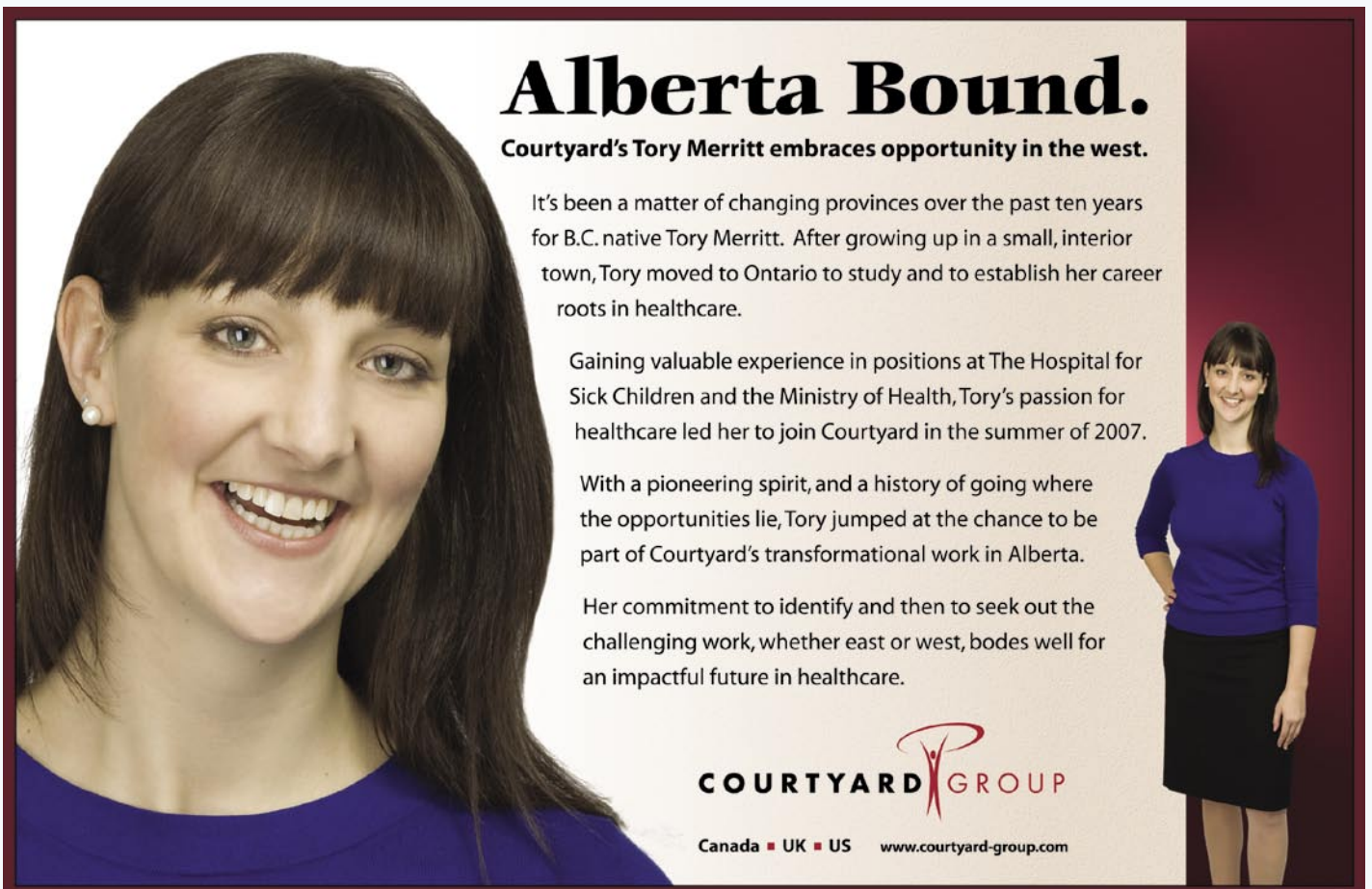
Originally published in *Nursing Leadership (CJNL)*, 13(2) 2000: 11–14

### Clinical Documentation Standards – Promise or Peril?

Lynn M. Nagle

Imagine a future of integrated clinical information systems that transcend the physical boundaries of clinical units, institutions and community care, providing nurses with comprehensive access to information and knowledge to support the delivery of care to individuals and families. Imagine not having to gather the same information repeatedly, ask the same questions over and over again, or struggle to assimilate information from multiple sources and informants. Better yet, as a person needing the services of the healthcare system, imagine not having to rely on memory for details of family health history or repeatedly provide the same information to numerous caregivers over the course of a single encounter (or multiple encounters) to satisfy the requirements of their specific data collection forms. The future lies in the electronic health record – but are we taking the right steps to get there? In particular, are we sufficiently challenging the status quo of the documentation structures associated with clinical information management?

Originally published in *Nursing Leadership (CJNL)*, 20(4) 2007: 33–36



# Alberta Bound.

**Courtyard's Tory Merritt embraces opportunity in the west.**

It's been a matter of changing provinces over the past ten years for B.C. native Tory Merritt. After growing up in a small, interior town, Tory moved to Ontario to study and to establish her career roots in healthcare.

Gaining valuable experience in positions at The Hospital for Sick Children and the Ministry of Health, Tory's passion for healthcare led her to join Courtyard in the summer of 2007.

With a pioneering spirit, and a history of going where the opportunities lie, Tory jumped at the chance to be part of Courtyard's transformational work in Alberta.

Her commitment to identify and then to seek out the challenging work, whether east or west, bodes well for an impactful future in healthcare.

**COURTYARD GROUP**

Canada ■ UK ■ US [www.courtyard-group.com](http://www.courtyard-group.com)