

Performance Strategies



Using CPOE to Reduce Variability of Care and Improve Outcomes

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CPOE at Concord Improves Compliance and Outcomes



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Leading Transformation

[Concord Hospital](#) has long used information technology to enhance patient care and safety. In fact, we were one of the first U.S. hospitals to use computers at the patient's bedside in the early 1990s. As champions for clinical informatics at Concord Hospital, my team and I are charged with leading transformation and bridging the gap between IT and clinical practice.

Two years ago, we began the move away from paper-based orders to deploy [Horizon Expert Orders™](#), McKesson's computerized provider order entry/clinical decision support system (CPOE/CDS). We knew we faced one of our toughest challenges to date. But at Concord, we believe that in the 21st century, paper-based orders are no longer compatible with good clinical care.

Studies suggest that the single biggest driver for CPOE adoption is physician engagement. To gain adoption, we knew we would need to show the immediate value of CPOE to physicians. I don't know about your hospital, but my physician colleagues get more jazzed about enhancing patient care than they do about operational or financial efficiencies. So our strategic vision is all about quality, safety, and improving the patient experience.

Strategies for Adoption

Stump the Staff: To generate a sense of urgency for CPOE adoption, we created a game called "Stump the Staff." Handwritten medication orders were displayed on a screen, and staff was asked to decipher the text. The game drew a lot of laughs as people attempted multiple wrong guesses about what the prescribing doctor intended. More importantly, it clearly illustrated the daily safety hazards nurses, pharmacists and patients faced in our paper-based environment.

Develop Order Sets to Promote Compliance and Reduce Variability of Care: To make an even stronger clinical case for CPOE, we set out to increase compliance in the use of prophylaxis to prevent venous thromboembolism (VTE). VTE is widely considered to be the most common preventable cause of hospital death in the U.S. Yet nationwide, only a little more than half of medical patients who are at risk of VTE receive appropriate prophylaxis. Concord already had compliance rates higher than national averages, but we knew we could do better.

Our CPOE team built "hot links" in the system that linked to current prophylaxis recommendations and to Concord's own evidence-based VTE guidelines. Speed is everything to physicians, so we avoided hard stops that would slow them down. Instead, we put the order set everywhere — it is embedded in every admission outline and shows up in each medical and surgical unit's preference list.

Doctors tend to concentrate on the patient's immediate hospital illness, so preventing pulmonary embolism is not always on their radar screens. The VTE order set brings best practice to providers at the point of care and reduces variability, but also allows them to decide on the best care approach for each patient.

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Achieving Higher Standards of Care

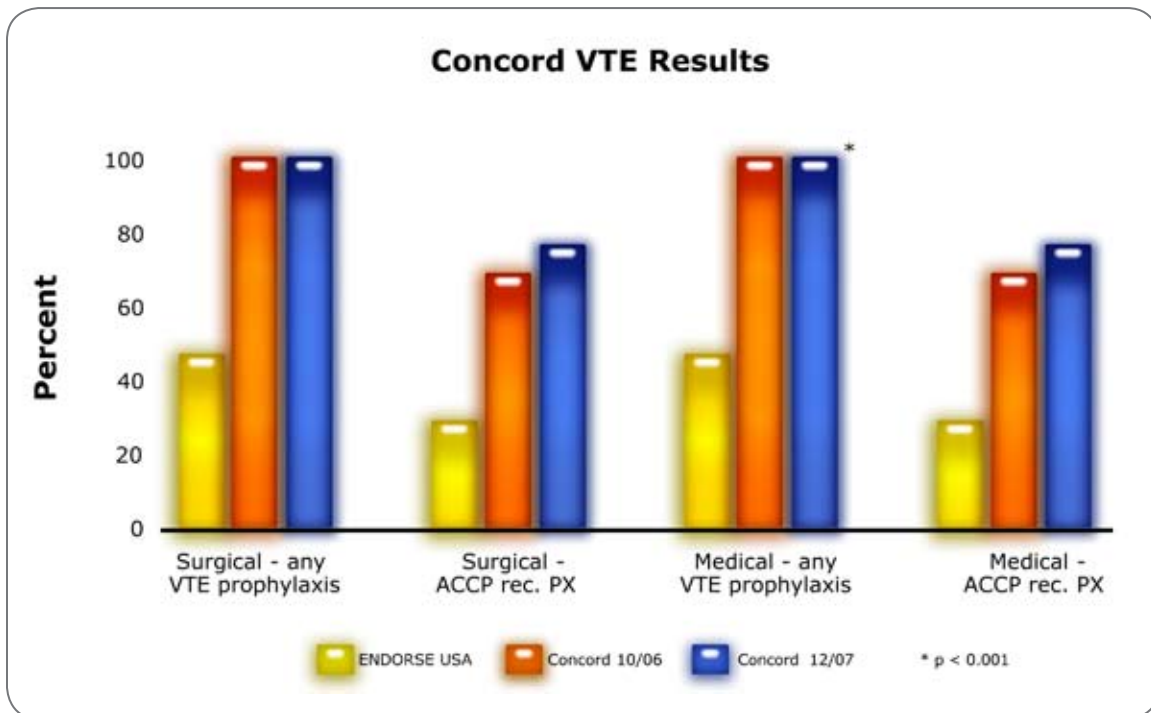
100% Compliance for VTE Prophylaxis: Within the first six months of using CPOE, we achieved 100% compliance for prophylaxis for inpatients at risk for VTE by presenting physicians with evidence-based reminders. CPOE provided an added push to get us over the top. Our success led us to create evidence-based order sets for numerous other conditions, including ischemic stroke, diabetes, delirium and acute coronary syndrome.

Documentation of Reasons for Radiology Exams: We also used CPOE to improve documentation of reasons for radiology exams. Missing information compromises quality of interpretation by the radiologist and negatively impacts revenue stream. With the addition of a required "reason for test" field for all imaging test orders (one of our few "hard stops"), we went from 47% to 100% compliance. In addition, imaging orders entered in the CPOE system were deemed appropriate for reimbursement 78% of the time — a 140% improvement that has favorably impacted revenue.

Creating Something Better

As you consider your own CPOE deployment, it's important to remember that evidence-based care is right for most patients most of the time, but not every patient all of the time. You must preserve the ability of your physicians to make discretionary decisions. Optimum patient care, unachievable in a paper order-entry environment, is now within the reach of those organizations that utilize CPOE and other advanced IT solutions. If you face resistance to CPOE, simply ask: Do you want the health of your child, spouse or parent to depend on paper-based orders when there's now something far superior?

Joel Berman has been a family physician for 26 years and is Concord Hospital's first Chief Medical Information Officer. His team has created EMR tools that facilitate the management of chronic illnesses and address complex problems such as anticoagulation, smoking cessation, and opioid management. He is also the hospital's lead physician for CPOE implementation.



Concord Hospital achieved 100% VTE prophylaxis compliance through physician use of CPOE/CDS. This graph shows Concord's results as of Dec. 2007 as compared to its results 14 months prior and compared to national data gathered through ENDORSE (Epidemiologic International Day for the Evaluation of Patients at Risk for Venous Thromboembolism in the Acute Hospital Care Setting), an international cross-sectional survey of 68,000 inpatients in 358 randomly chosen hospitals around the globe, sponsored by the University of Massachusetts Medical School.

