



The Quality Initiative

Computerized Physician Order Entry

Computerized physician order entry (CPOE) is a computer application that supports the electronic entry by physicians of patient orders for diagnostic and treatment services, such as medications, laboratory and other tests. It compares new orders against standards for dosing, checks for allergies or interactions with other drugs and flags potential problems. Thus, CPOE goes well beyond replacing paper orders with electronic ones — it makes relevant information available at the time of ordering and applies rules-based logic to help the physician make optimal ordering decisions.

Much interest in CPOE is focused on its potential to reduce medication errors, the largest single cause of medical errors in hospitals. Additionally, CPOE has been shown to reduce costs through avoided adverse events, reduced utilization and shorter lengths of stay. It also reduces variations in care by encouraging recommended care practices.

Barriers to Implementation

Health systems recognize that they need to take a hard look at CPOE as an important element of an overall patient safety strategy. But if CPOE is such a good idea, why have so few hospitals implemented it to date? For many years, hospital executives and hospital information systems vendors believed that physicians would not use computerized ordering. A second reason for the slow adoption was that, because demand was low, few CPOE products were developed, and those that were available were not perfected. Finally, the complexity of the undertaking, the risk and the cost also hinder adoption. However, both patient safety and cost pressures present a clear imperative to proceed with CPOE —

and advances in technology, combined with greater industry experience and more robust CPOE applications have increased the likelihood of success.

CPOE typically is not a stand-alone application but a module of a clinical information system. Hospitals best positioned to adopt CPOE are those with clinical systems from a vendor that offers CPOE capability. Any institution replacing a hospital information system should carefully evaluate CPOE features as part of the decision. Because of CPOE's complexity and long lead times for development, few organizations today are likely to choose the path of internal CPOE product development.

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Different Types of Systems

When examining CPOE, it is necessary to differentiate between basic products focused on capture and transmission of the order ("order communication") from true CPOE products, which contain interactive decision support. Critical "must-have" CPOE features such as interaction checking and rules-based clinical decision support will ensure improvements in medication safety and quality, as well as enhance ease of use and implementation.

Beyond features and functions, CPOE needs to be highly responsive — exhibiting quick response time to speed physician ordering sessions — and reliable, to support the critical ordering process without interruption.



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Implementing CPOE takes concerted effort, perseverance and significant capital investment. Organizations need to learn as much as possible from the pioneers who preceded them, to increase their speed of adoption and likelihood

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of success. The early adopters, who contributed much of what we know about the power of CPOE, were mainly academic medical centers with homegrown systems. But success stories also now include community hospitals and community practice physicians. These all tell the same story — CPOE is not a technology implementation, but a redesign of a complex clinical process, which integrates technology at key points to optimize ordering decisions.

Factors for Success

An examination of industry experience with CPOE reveals several critical success factors.

- **Leadership**—Physicians lead the effort – both at the project and executive levels – with physician champions throughout. Executive leadership must be unwavering.
- **Operations**—There is no such thing as too much attention to the details of a CPOE process.
- **Change**—CPOE affects workflow and process of all caregivers and ancillary.
- **Management**—Departments, requiring a commitment to serious change management. Even when things go well, there is a need to push rather than wait for voluntary change.

- **Support**—During rollout, responsiveness and flexibility are key to working through the different needs of each new clinical area. Rollout is a significant milestone but not the end of support.

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How to Get Started

- Incorporate CPOE into overall patient safety strategy;
- Be clear about objectives and expectations;
- Be sure to include the most in-depth decision support available in CPOE software;
- Build a universal understanding of the importance of the project;
- Develop a plan and assign physicians to be accountable for executive leadership and project management; and
- Learn from similar organizations that have adopted CPOE. ■

California HealthCare Foundation

The California HealthCare Foundation was established in May 1996. The Foundation's mission is to expand access to affordable, quality health care for underserved individuals and communities, and to promote fundamental improvements in the health status of the people of California.



Material for this fact sheet was developed by First Consulting Group, Long Beach, CA. www.fcg.com.