

Physician Order Entry Systems Should Be Integrated

THOMAS HANDLER, MD
Research Director
Gartner

BARRY HIEB, MD
Research Director
Gartner

THANKS TO INFLUENCES SUCH AS THE INSTITUTE of Medicine (IOM) and the Leapfrog Group there is now a high priority on implementing physician order entry (POE) systems. Given the substantial cost and complexity associated with implementing POE as part of a computer-based patient record system (CPR), some care delivery organizations (CDOs) are considering implementing a POE as a stand-alone approach (e.g., an addition to a pharmacy system).

On its surface, implementing a stand-alone POE has significant appeal. This can be a relatively rapid method to reduce many of the errors associated with the ordering process, if the system:

- Is designed for physician entry of orders
- Provides a profile of all active (and inactive) medications
- Performs drug/drug interaction and drug/allergy checking

With these minimal capabilities, errors associated with physician handwriting, poor communication, incomplete orders and lack of simple clinical decision support (checks for drug-drug interactions, allergies) can be favorably impacted. Implementing a stand-alone system can be easier, faster and certainly far less

costly in the short term than a more comprehensive solution. It permits the CDO to focus on a limited set of tasks that require fewer resources when compared to POE as part of a CPR initiative.

There are, however, significant limitations to a stand-alone POE approach. Achieving the magnitude of error reduction anticipated by the IOM and encouraged by clinical quality initiatives (e.g., Leapfrog) will require a far more comprehensive set of changes than can be achieved by a stand-alone POE. A stand-alone POE cannot provide as many benefits as it could if it was part of a CPR. Linking orders to a departmental system may limit the breadth of possible orders (e.g., only medication orders, not lab, radiology or consults). Furthermore, a stand-alone POE, often requires duplication of efforts by physicians (e.g., fully documenting the orders in progress notes or needing to log into a separate system for pertinent lab results when creating an order). This makes physician acceptance harder to obtain.

A fully functional POE system needs to be aware not only of what orders and medications have already been entered for a patient, but also the clinical status of the patient, what clinical management protocols are in effect for that

person, what other clinicians are participating in the patient's care and how treatment for one diagnosis may interact with the management of another condition affecting the same patient. This requires progressively more sophisticated clinical decision support to augment the orders process, and also requires the POE to interact with virtually all of the other components of a clinical automation system.

To achieve full potential functionality, the order entry system must be integrated with the organization's clinical data repository, clinical documentation system, clinical decision support system, controlled medical vocabulary (CMV), enterprise master person index (EMPI), scheduling system, lab system, pharmacy system, radiology system, billing system, Web environment and the security management system. To do so starting with a stand-alone application means that the institution will need to support a large number of interfacing efforts over time.

Although it is certainly true that a CPR also requires interfacing efforts, a stand-alone POE will require many more. This means that the final cost and effort to create a stand-alone system will almost certainly exceed that of a system that is part of a CPR from the start. In addition, a greater portion of the support

burden for the system must fall on the institution because the order-entry system vendor likely will not be familiar with the various components in the CDO's IT environment that came from other suppliers.

Achieving a comprehensive and highly integrated POE system essentially requires the creation of a CPR. As a result, in the long term, it is more appropriate to implement a POE system as a part of an overall clinical automation strategy rather than as a stand-alone component that will retrospectively be interfaced with the remainder of the clinical information systems.

SUMMARY

A CDO considering the implementation of a stand-alone POE system, rather than an integrated clinical system, must measure the trade-offs. Although a stand-alone POE can be a very useful short-term strategy, CDOs must accept the long-term limitations of this approach in terms of limited function and increased total cost of ownership. CDOs that implement stand-alone POEs must recognize and be willing to accept that in the long run, those systems cannot match the functionality of an integrated solution. The vast majority of CDOs are better advised to select POE from a vendor that can also ultimately provide them a comprehensive CPR. **e**

CALL FOR POSTERS

Sharing your National Best Practices

a national initiative from the Ontario Hospital Association

Join a collaboration of posters that offers regions, hospitals and other healthcare institutions from across the country an opportunity to share best practices.

Selected displays will be showcased during the OHA's annual convention November 18,19 & 20, 2002 in Toronto. Posters will be adjudicated by members of the *Hospital Quarterly* editorial board and are eligible for the OHA/*Hospital Quarterly* Best Practices Display Awards – presented at the grand plenary session concluding the proceedings.

To receive guidelines or to submit an abstract for the 2002 National Best Practices Display, contact Patricia Sutherland, Program Planner, Ontario Hospital Association at (416) 205-1312 or e-mail: psymssutherland@oha.com

