The Value of Computerized Provider Order Entry in Ambulatory Settings
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Authors
Douglas Johnston, MA
Eric Pan, MD, MSc
Janice Walker, RN, MBA
David W. Bates, MD, MSc
Blackford Middleton, MD, MPH, MSc

Expert Panel
Joseph E. Bisordi, MD, FACP
John J. Janas III, MD, FAAP
J. Marc Overhage, MD, PhD
Thomas H. Payne, MD, FACP
Rainu Kaushal, MD, MPH
Gordon Schiff, MD

Research Assistants
Drew Freilich, BA
Jennifer Hartling, BA
# ACPOE E-mail Survey

## Vendors Contacted

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<thead>
<tr>
<th>Healthcare IT</th>
<th>ePrescribing</th>
<th>Knowledgebase</th>
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CPOE in Ambulatory Settings

Please type free text answers to the questions below.

Return the completed survey to Jan Walker (jwalker3@partners.org) or fax to 781-416-8913. To include your responses in our project, we must receive the survey by November 5, 2002.

Definition of Ambulatory Computerized Provider Order Entry (ACPOE)
Ambulatory CPOE is an application that allows providers to write drug, laboratory, radiology, referral, and procedure orders electronically in ambulatory care settings. These systems also integrate some level of decision-support functionality to assist providers in reducing error rates and practicing in an evidence-based fashion. Finally, these systems may also allow providers to perform administrative functions such as coding visits, providing codes for laboratory tests, and scheduling future visits. Any one system may not have all these capabilities; nevertheless, we are interested in your experiences with any of them.

“Ambulatory care settings” is a broad term referring to care outside hospitals and other inpatient settings. For this survey, we define ambulatory care settings as freestanding and hospital-based clinics (both primary and specialty care), ambulatory surgery centers, physicians’ offices, and home care settings.

SECTION I – Ambulatory CPOE products currently available

1. Does your organization currently have an ambulatory CPOE product for sale?
   ☐ Yes ☐ No
   If Yes, please answer questions 2 – 10. If No, please skip to SECTION II.

2. Please indicate your product’s name, current production version, and mode of delivery (software license, ASP).

3. What is the target market for your product: small, medium, large physician practices, community hospitals, health systems? Please specify outpatient setting size and type.

4. When was this product first implemented? How many installations of this product are currently up and running?

5. Using the ACPOE Features list at the end of this survey, please indicate your product’s current features and functions.
6. Please describe your product’s IT staffing, human resource, and training needs.

7. Please discuss your pricing model and any implementation cost data that you are willing to share. We will not quote specific prices without your permission.
   License model and cost: per server, per CPU, per MD, per user? Other?
   Maintenance fee structure and terms: % total contract price annually? Other?
   Implementation fees: (typically 2x license costs)?

8. What benefits have providers and other stakeholders (payers, purchasers) realized from your product?
   a. What are the financial impacts?
   b. What are the clinical impacts?
   c. What is the impact on user and patient satisfaction?
   d. What is the impact on legal or compliance risk?

9. How much value can providers and other stakeholders (payers, purchasers) expect immediately upon implementation of your ACPOE system? Over six months? Over one year?

10. If you think some of your physician users have particular insight and data on the financial, clinical, or organizational benefits of your product, we would like to speak with them. Please provide contact information.

Thank you for completing this section. Please skip to SECTION IV.

SECTION II – Ambulatory CPOE products in development

11. Are you planning on developing an ACPOE product?
    □ Yes    □ No
    If Yes, please answer questions 12 - 18. If No, please skip to SECTION III.
12. When will your product be available?

13. Using the ACPOE Features list at the end of this survey, please indicate the features and functions the first version of your product will support.

14. What IT staffing, human resource, and training resources will your product require?

15. How will your product be delivered (software license, ASP)?

16. What market will this product be developed for: small, medium, large physician practices, community hospitals, health systems? Please specify outpatient setting size and type.

17. What’s the expected price range for this product? Please detail your intended pricing model. We will not quote specific prices without your permission.
   - License model: per server, per CPU, per user (MD, RN, NP, ancillary staff)?
     - License costs?
     - Maintenance costs?
     - Implementation costs?

18. What benefits do you anticipate providers and other stakeholders (payers, purchasers) realizing from your product?
   - a. What will be the financial impacts?
   - b. What will be the clinical impacts?
   - c. What will be the impact on user and patient satisfaction?
   - d. What will be the impact on legal or compliance risk?

Thank you for completing this section. Please skip to SECTION IV.
SECTION III – No ambulatory CPOE products or plans

19. Why are you not planning on developing an outpatient CPOE product?

SECTION IV – General questions about CPOE in ambulatory settings

1. What are the main barriers to implementing ACPOE?

2. What are the best practices for implementing ACPOE?

3. What are the strategic advantages of ACPOE for different constituents: providers, payer, purchasers, and pharmaceutical outlets?

4. What additional sources – studies, CPOE users, experts – should we consult as we investigate the value of ambulatory CPOE?

5. Is there anything more you want to add about outpatient CPOE that we did not ask about?

Section V – ACPOE features

Please select all features and functions that apply to your outpatient CPOE system and, where indicated, provide free text comments.

1. Patient data
   - Demographics
   - Height, weight, body-surface area (BSA)
   - Diagnoses
   - Problem list
   - Laboratory data
   - Cultures
   - Imaging data
   - Consultation reports
   - Pharmacy
   - Insurer
   - Other (specify with free text)
Medication data: □Current □Past □Over-the-counter □Supplements
Medication allergies: □Medication name □Reaction
Drug sensitivities: □Medication name □Reaction

2. Knowledge bases
□Drug references (e.g., USPDI, vol. 1)
□Patient education (e.g., USPDI, vol. 2)
□Formulary
□Medication cost
□Test costs
□Administrative code sets (e.g., ICD-9, CPT-4)
□Medical necessity
□Other (specify with free text)

3. Ordering
Medication: □New □Refills □Indications
Laboratory: □Hematology □Chemistry □Indications
□Culture (e.g., blood, urine) to be collected by laboratory
□Procedural specimens (e.g., spinal fluid, wound cultures) obtained at office
□Prewritten orders for patient-collected specimen at home

□Imaging
□Referral
□Structured ordering (templates, sets)
□Charge capture
□Other (specify with free text)

4. User interface
Presentation: □Textual □Graphical □Spoken
Data entry: □Keyboard/Mouse □Touch-screen
□Handwriting (light pen, tablets) □Voice recognition

5. Decision support
□Static references (Merck manual, PDR, etc.)

Single medication: □Formulary compliance □Common side effects
□Route/dosing range verification □Dosing calculation
Drug interaction checking:

What:  □ Allergy  □ Medications in current order  □ OTC medications
    □ Medications in medication list  □ Supplements  □ Diagnosis
    □ Laboratory

When: □ At ordering  □ At refill  □ Whenever patient data is updated

Medication checks are by:   □ Name  □ Medication class
    □ Full chemical interaction (e.g., all sulfa drugs)

Guidelines:  □ Built-in  □ Modifiable by practice

□ Sharable with other practices/sites

□ Consequent orders
□ Other (specify with free text)

6. Connectivity

<table>
<thead>
<tr>
<th>Connection to</th>
<th>Direct connection</th>
<th>Fax-based</th>
<th>Paper-based</th>
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<tbody>
<tr>
<td>Insurer</td>
<td>□ Eligibility verification</td>
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<td></td>
<td>□ Pre-approval/authorization</td>
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<td></td>
<td>□ Automated reporting</td>
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<td>In-patient facility</td>
<td>□ EMR</td>
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<td></td>
<td>□ Scheduling</td>
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<td></td>
<td>□ Pre-admission orders</td>
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<td>□ In-patient CPOE</td>
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<td>Pharmacy</td>
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<td></td>
<td>□ Refills</td>
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<td></td>
<td>□ Refill requests from pharmacy</td>
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<td>Laboratory</td>
<td>□ Test ordering</td>
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<td>□ Test scheduling</td>
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<td></td>
<td>□ Result reporting</td>
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<td>Imaging</td>
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<td>Referrals</td>
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<td>□ Scheduling referral</td>
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<tr>
<td></td>
<td>□ Result reporting</td>
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7. Hardware and software

Database:  
- Cache
- Microsoft SQL
- NCR Teradata
- Oracle
- Sybase
- Proprietary (specify with free text)

Server Operating System:  
- AIX, HPUX, UNIX
- Linux
- Microsoft Windows
- Solaris
- Proprietary (specify with free text)

Client Platform:  
- Personal computer
- Web browser client
- Palm OS PDA
- Pocket PCs
- Mobile phone client (WAP)

8. Infrastructure requirements

What additional software is required to support your outpatient order entry system?
- Electronic Medical Record (EMR)
- Clinical data repository
- Enterprise Master Patient Index
- Scheduling system
- Financial System
- Billing and coding system
- Other (specify with free text)
- N/A

Does your system include pre-developed interfaces or support for:
- Your own clinical systems?
- Other vendors’ clinical systems (specify with free text)?
- Systems integration standards (e.g., HL7) (specify with free text)?
- Other?
- N/A
What level of connectivity is required to support the following means of accessing your system?

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<th>Access Type</th>
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<th>ISDN</th>
<th>DSL</th>
<th>Cable Modem or T1</th>
<th>More than single T1</th>
<th>Proprietary network required</th>
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Thank you very much for completing this survey.