5-year ROI for the Implementation of a Computer-Based Patient Record in a Small Group Practice

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Overview

• Introduction
• Practice Workflow
• Project Costs
• Project Savings
• Conclusion
Background of the Project

The Practice
Outpatient Cardiology Group
- 2 Offices
- 4 Cardiologists
- 1 Office Manager
- 4 Nurses
- 10 Support Staff Members

Data was gathered from discussions and emails with the office manager, the vendor, and the practice physicians.

The office had been using a traditional paper-based charting system.
PrognosCIS Software

- Integrated clinical information system
- Allows physicians to log notes
- Web-based graphical user interface
- Automates Lab and Radiology orders and results
- Write and track prescriptions
- Eliminates the need for external transcription

PrognosCIS Architecture
Practice Workflow

Patient office visit
- Prior to physician evaluation
- Physician evaluation
- Post physician evaluation
- Diagnostic tests

Situations where either the patient and/or the primary physician are not in the office

Prior to Physician Evaluation

Workflow:
- Patient phones for an appointment
- Secretary verifies insurance
- Patient comes to the office and signs in
- Patient chart is pulled
- Patient seen by nurse
- Nursing documentation
  - Chief complaint
  - Vital signs

Time saving – no chart handoff necessary

Time saving – no chart handoff necessary
- Additional cost savings: paper, ink, other office supplies
- No more lost charts

Real-time transcription of notes
Physician Evaluation

Workflow

Chart given to physician

Patient seen by physician
- History
- Physical
- Review of data: labs, radiology, consults

Physician makes a plan

Notes and correspondences written

Time saving: no chart handoff necessary

Time saving by: templates, cut and paste, and dictation

Time saving by having direct fax or email to CPR

Time and cost savings by automatic generation of physician notes and correspondences.

Time saving by email communication with fellow physicians or payers

Post Physician Evaluation

Workflow

Prescriptions written

Lab forms filled out

Billing sheet filled out and sent to payer

Time saving due to automatic printing, fax, and emailing of prescriptions

Time saving due to forms automatically filled out and sent to ancillary facility

• Bill at a higher CPT code due to greater information placed in physician note
• Direct interface w/ billing program to electronically submit claims
• Immediate submission of billing
Diagnostic Testing

Echo, stress, and vascular testing:

1. Request filled out by ordering physician
2. Patient makes appointment
3. Test performed
4. Physician fills out result report by hand
5. Handwritten report goes to secretary who types report
6. Physician checks typed report for errors
7. Report is sent back to secretary
8. Secretary corrects errors
9. Report is released

Physician, using templates, fills out report on PrognoCIS and releases it immediately.

Out of Office Situations

- Automatic reminders for well visits
- Ability to access patient record from any location
- Ability of covering physician to access patient data
- Clear and legible records with exact time documented for all notes

Increases number of patient visits due to reminders sent to patients
Greater accuracy and reliability when chart not available.
Greater accuracy and reliability when primary care physician not available.
Crucial during any audit
Possible reduction in liability insurance due to CPR
PrognoCIS

Hardware Requirements

Server Minimum Specifications
Pentium 4, 1 GHz Processor
1 GB RAM, 120 Gig Hard Drive
MS-SQL 2000 Database

Alternative Desktop Minimum Specifications
iMAC Power PC, G4 1.25 GHz Processor
256 MB RAM, 30 Gig Hard Drive

PrognoCIS – One-time Costs

Initial Hardware Costs
- $2,000 per server = $4,000
- MS-SQL Server 2000 database at $1,489 per server and Wildcat Business Edition Web Server at $1,495 per server = $5,968
- $1,800 per workstation x 10 = $18,000
- $1,000 one-time hardware configuration
PrognoCIS – One-time Costs

PrognoCIS Direct Costs - Bizmatics
- $1,500 for one physician
- $4,500 licensing fees for 3 additional physicians (70% discount from Bizmatics)
- $4,000 training fee for PrognoCIS
- $2,000 data migration cost, quoted price
  - Based on price quote from Bizmatics

Other One-time Costs
- $300 broadband install per office = $600
- Lost revenue for training – 2.5 days of training and lost time due to adjustment
  - $125/pt x 10 pts x 4 physicians x 2.5 days = $12,500 total
PrognCIS – Annual Costs

Office Computer Support
- $0 in the first year, $1,000 per year starting in year 2 at a growth of 5% per year

Hardware/server software maintenance
- $1,200 per year – starting year 2 – 5% growth per year

Broadband Access
- $150 per month per office = $3,600 per year (cost from Roadrunner)

PrognCIS – Annual Costs

PrognCIS Software Maintenance
- 18% of the total software cost per year - $3,400 per year starting year 2

Hardware Upkeep
- We included $2,000 per year as a reserve for hardware upgrades

Contingency
- We included an annual contingency of $1,000 for unexpected costs – starting year 2
Qualitative Benefits

- Ubiquitous availability of records
- Guaranteed access – no record loss
- Better scheduling reminders
- Improved quality of care
- Reduced medical errors due to
  - improved legibility
  - better access to information

Quantitative Benefits

- Time saving
  - Alerts and notifications increase staff communication
  - Transcription turnaround time
- Money saving
  - Increased staff productivity
  - Decreased staffing requirements
  - Increased reimbursement due to more accurate evaluation and management coding
Time Savings Analysis

- Significant time savings for nurses, but office does not anticipate any nursing layoffs
- Individual physician time spent on daily activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>Daily Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct patient contact</td>
<td>5</td>
</tr>
<tr>
<td>Dictation/Transcription</td>
<td>0.5</td>
</tr>
<tr>
<td>On the phone with colleagues</td>
<td>1</td>
</tr>
<tr>
<td>Writing prescriptions</td>
<td>1</td>
</tr>
<tr>
<td>Filling out forms for tests</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>8 hours/day</strong></td>
</tr>
</tbody>
</table>

For example, 3 extra patients/day * 240 workdays/year * $125/patient = $90,000
Increased Revenue

- Physician’s office estimates that each patient generates $125 revenue
- Bizmatics calculates about 15% of patients are underbilled in a physicians’ office by $10/day
  - Each physician currently sees 10 outpatients/day
  - 6 patients underbilled/day → $60/physician/day

Other Cost Reductions

- Office Supplies
  - Physicians will be printing documents from PrognoCIS to add to patients’ paper charts until they are familiar with the system
  - $250/month * 12 months = $3000 annual savings
- Transcription Fees
  - Assuming the use of an external service
  - $500 *12 months * 4 physicians = $24,000 annual savings
    (using Bizmatics calculation of $500/physician/month)
- Staff Reduction
  - Medical coding specialist for billing and/or transcriptionist for echo, stress, vascular tests’ report entry due to automatic coding and report generation of medical records by PrognoCIS
## Cost Reduction and Increased Revenue Analysis

<table>
<thead>
<tr>
<th>Costs</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Office Supplies</td>
<td>$0</td>
<td>$0</td>
<td>$3,000</td>
<td>$3,150</td>
<td>$3,308</td>
<td>$9,458</td>
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<tr>
<td>Office Space</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Transcription Fees</td>
<td>$24,000</td>
<td>$25,200</td>
<td>$26,490</td>
<td>$27,783</td>
<td>$29,172</td>
<td>$132,615</td>
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<tr>
<td>Staff Reduction</td>
<td>$30,000</td>
<td>$31,500</td>
<td>$33,075</td>
<td>$34,720</td>
<td>$36,465</td>
<td>$165,769</td>
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<td>Liability Insurance</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td>$54,000</td>
<td>$56,700</td>
<td>$62,535</td>
<td>$65,662</td>
<td>$68,445</td>
<td>$307,420</td>
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</table>

<table>
<thead>
<tr>
<th>Revenue</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased Patient Volume</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Nurses</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>b. Physicians</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Documentation</td>
<td>$80,000</td>
<td>$120,000</td>
<td>$126,000</td>
<td>$132,300</td>
<td>$138,915</td>
<td>$607,215</td>
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<tr>
<td>ii. Prescriptions</td>
<td>$150,000</td>
<td>$157,500</td>
<td>$165,375</td>
<td>$173,644</td>
<td>$182,326</td>
<td>$828,845</td>
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<tr>
<td>iii. On the Phone</td>
<td>$80,000</td>
<td>$94,500</td>
<td>$150,000</td>
<td>$157,500</td>
<td>$165,375</td>
<td>$657,375</td>
</tr>
<tr>
<td>iv. Filling out Forms</td>
<td>$80,000</td>
<td>$120,000</td>
<td>$126,000</td>
<td>$132,300</td>
<td>$138,915</td>
<td>$607,215</td>
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<tr>
<td>Increased Billing</td>
<td>$14,400</td>
<td>$15,120</td>
<td>$15,876</td>
<td>$16,670</td>
<td>$17,503</td>
<td>$79,569</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td>$434,400</td>
<td>$501,210</td>
<td>$561,281</td>
<td>$572,414</td>
<td>$643,924</td>
<td>$2,780,219</td>
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</table>

| **Total Annual Return**      | $488,400| $557,920| $623,736| $678,075| $711,979| $3,088,080|

## Conclusions

- Computer-based patient records for small physician practices have tremendous potential for cost savings and revenue.

- The physician office must make a firm financial and time commitment to allow for proper implementation.