Ambulatory Electronic Medical Record Payback Analysis 7 years after Implementation in a Tertiary Care County Medical System

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Abstract

Electronic medical records (EMRs) are gaining increasing prominence in healthcare, however still have low market penetration. EMR implementation cost is a primary perceived barrier. Here we present a payback analysis on an outpatient EMR implementation, showing capital expense recovery (net of operating costs) at 6 years and now generating $6 million yearly in direct savings for our healthcare system.

Introduction

Less then 30% of physician currently use EMRs in ambulatory settings [1]. Although many barriers exist to EMR ambulatory adoption, one primary barrier generally identified is cost [2].

Here we present a payback analysis 7-years post implementation of a system-wide outpatient EMR within a tertiary care, county, academically-affiliated medical system. The decision to deploy an outpatient EMR in our resource constrained environment was viewed as a make or break decision. The economics of healthcare place a premium on effective medical and financial management of patients throughout their care. Paper based records along with the disparate systems in place did not provide the integrated management tools necessary to support our hospital system long term.

Our medical system has over 700 beds, 440 physicians, and 360 resident physicians. We see over 730,000 outpatient visits, 85,000 emergency department visits, with a $618 million budget and $192 million in charity care annually.

Methods

Planning for our EMR began in the mid-1990s, with the phased installation from 1999-2002. We gathered financial data from 1999-2006.

We looked at direct measures only. Indirect benefits were not reviewed. Direct returns included: 1) decrease in medical records costs, 2) decrease in transcription costs, and 3) revenue enhancement due to increase in charge capture and reduction in charge lag due to improved clinical documentation and internal controls facilitated by an integrated scheduling, registration, billing and ambulatory EMR.

Results

Our initial implementation plan projected a 13 year payback period. The post-implementation analysis showed recovery of capital expenses within 6 years and revealed significantly greater returns than originally forecasted. A breakdown of major direct benefits appears in Table 1.

<table>
<thead>
<tr>
<th>Category</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recovered EMR Capital Costs</td>
<td>6 years</td>
</tr>
<tr>
<td>Reduction of Medical Record Costs</td>
<td>$600,000/year</td>
</tr>
<tr>
<td>Reduction in Transcription Costs</td>
<td>$1,600,000/year</td>
</tr>
<tr>
<td>Revenue Enhancement</td>
<td>$5,000,000/year</td>
</tr>
<tr>
<td>Net EMR savings to hospital budget</td>
<td>$6,000,000/year 1</td>
</tr>
</tbody>
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Table 1 – EMR Benefits. 1 – starting in 2006.

Unmeasured indirect returns commonly associated with EMRs, such as better quality and improved safety of care, would make our true returns even higher.

Conclusions

Our study documents that the overall return on investment, both in direct and indirect returns, clearly makes an EMR practical for large tertiary care medical system, even ones financially limited, such as our own county medical system. Although one of the perceived barriers to EMR implementation is the financial investment, the return on this investment far out ways the costs, for large medical systems.

References
