

**ASAP Cost-Benefit Analysis
on the
Value of Technology**

October 2009

ASAP Cost-Benefit Analysis on the Value of Technology

Introduction

The American Society for Automation in Pharmacy (ASAP) recently undertook a cost-benefit analysis to show the cost that pharmacies incur in the use of technology and how it serves to improve patient safety and patient compliance, and serves to reduce fraud and abuse. We believe that the investment in technology used to deliver needed medications to millions of Americans each and every day is simply overlooked or taken for granted by state and federal governments, third-party payers, and others.

Methodology

In order to develop the cost factors as fully as possible, we solicited input from technology vendors and the users of the technology. Prescription volume breakpoints were selected based upon the levels at which additional technology components are typically purchased. While purchase decisions are generally individualized to address the specific needs of each pharmacy, we found considerable agreement regarding the breakpoints at which technology is added and the components that are most often added. Purchase prices were rounded to the nearest \$500 for convenience. Depreciation was calculated on a four-year, straight-line basis. While some variability exists in the way that vendor service agreements are handled, we found that certain services and third-party database components are bundled into regular maintenance fees by most vendors. Consequently, we did not attempt to break out the cost of each component. Finally, total costs are presented as an average per prescription in order to equate technology costs to the total cost of dispensing.

Pharmacy technology clearly requires a significant capital outlay. However, specific benefits are difficult to connect with specific cost factors. The relationship between costs and benefits would be classified as many-to-many, such that multiple benefits may be associated with many cost factors and multiple cost factors may be associated with many benefits. We decided to categorize the benefits of key technology components into three areas: patient safety, compliance, and fraud and abuse prevention. Included in this report is a table showing a breakdown of the various technologies and how they benefit these three areas.

We did not attempt to allocate the percentage of the cost per prescription that would benefit safety and compliance or reduce fraud and abuse. We are leaving it up to the user of the data to make this determination. It should also be noted that we did not attempt to determine the return on investment. This was not the purpose. Once again, the focus of this study was to determine the cost that is added to a prescription based on the technology used in the pharmacy. The costs do not represent the total cost to fill a prescription, only the technology costs associated with the prescription.

The ASAP membership was invited to offer comments. We had broad participation and comment with many suggestions incorporated into the final document. There were no comments challenging the breakpoints or the costs used for the various technologies included.

We did not attempt to separate hardware and software costs, since there it is common industry practice to bundle hardware and software, making it most difficult to segregate these costs with any degree of confidence. Same with maintenance contracts.

Intended Use

We encourage the use of these findings, if it is felt the data will serve to improve reimbursement and open up new opportunities for pharmacy in providing technology-based services. We only ask that reference be given to ASAP as the source.

We believe that this study provides an important first step for stakeholders in the pharmaceutical distribution chain to appreciate and understand the costs and value of technology solutions used in the daily practice of pharmacy.

	Pharmacy Profile	Pharmacy Profile	Pharmacy Profile
Prescription Range	100 to 200 Rxs/Day	200 to 300 Rxs/Day	300 to 500+ Rxs/Day
Technology Used*			
Pharmacy Management System	\$20,000	\$30,000	\$35,000
Workflow System		\$55,000	\$60,000
Barcode Scanning	\$1,000	\$2,000	\$2,000
Document Scanning at Intake	\$1,000	\$1,000	\$2,000
Robotic Dispensing			\$185,000
Automated Counting		\$30,000	
Counting Scale	\$4,000	\$4,000	\$4,000
Interactive Voice Reponse (IVR)	\$4,000	\$4,000	\$4,000
Will-Call Bin Management		inc.	inc.
Compliance Packaging	\$5,000	\$10,000	\$25,000
E-signature Capture	\$2,500	\$5,000	\$7,500
Laser Printers (Double Drawer)	\$1,500	\$3,000	\$5,000
Thermal Printers		\$600	\$600
Point-of-Sale System	\$20,000	\$20,000	\$35,000
Total Investment Cost	\$59,000	\$164,600	\$365,100
Annual Depreciation ¹	\$14,750	\$41,150	\$91,275
Total Rxs/Yr. (6 days a week, 52 weeks) ²	46,800	78,000	124,800
Cost per Prescription Based on Annual Depreciated Cost	\$0.3152	\$0.5276	\$0.7314
Service Agreements/Software & Database Maintenance³	\$7,600	\$25,000	\$57,400
-Drug Database Information ⁴	inc.	inc.	inc.
-Prospective DUR module	inc.	inc.	inc.
-Warning Labels	inc.	inc.	inc.
-Drug Images	inc.	inc.	inc.

Value of Technology • October 2009

-Drug Imprint Information	inc.	inc.	inc.
-Consumer Medication Information (CMI)	inc.	inc.	inc.
-PMP Reporting	inc.	inc.	inc.
-PSE Tracking	inc.	inc.	inc.
-Internet Access (Clinical/Drug Info. Web Sites)	\$1,200	\$1,200	\$1,200
-Compliance Packaging	\$1,200	\$1,200	\$1,200
-IVR support	\$700	\$700	\$700
Total Annual Support Costs	\$10,600	\$28,100	\$60,500
Annual Support Cost per Rx	\$0.2265	\$0.3603	\$0.4848
Annual Cost per Rx (Depreciation + Service Costs)	\$0.5417	\$0.8878	\$1.2161
E-Prescriptions	\$514	\$857	\$1,391
Annual Cost of Non-Controlled Substances that Can be ePrescribed ⁵	\$0.024	\$0.024	\$0.024
Total Technology Cost Per Prescription	\$0.57	\$0.91	\$1.24

*Includes hardware and appropriate software.

Footnotes:

1. The IRS allows hardware depreciation for five or seven years, software three years. Since hardware and software are bundled, for purposes of this illustration an average four-year depreciation was used. Bonus depreciation allowed by the IRS was not factored in.
2. Total annual Rx volume based on midpoint of range given.
3. The cost of service agreements was based on 18% of the investment cost for the first 6 line items under technology used and for POS systems.
4. Inc. means included with Pharmacy Management System or Workflow System.
5. Since controlled substances cannot be e-prescribed and account for approximately 12% of prescriptions dispensed, the prescription base is 88%. Of this roughly 52% represents new and renewals for e-prescribing. Thus, the midpoint of the volume range $x .88 \times .52 \times .08$ (the current level of e-prescribing) was the basis for the calculation at 30 cents per e-prescription transaction.

Areas of Impact

Technology Used	Benefits Safety	Benefits Compliance	Prevents Fraud & Abuse
Pharmacy Management System	•	•	•
Prospective DUR Module	•		
Warning Labels	•	•	
Drug Images	•		
Drug Imprint Information	•		
Consumer Medication Information (CMI)	•	•	
Workflow System	•	•	•
Barcode Scanning	•	•	
Document Management	•		
Robotic Dispensing	•		•
Automated Counting	•		•
Counting Scale	•		•
IVR	•	•	
Will-Call Bin Management	•		•
Compliance Packaging		•	•
E-signature Capture	•		•
PMP Reporting	•		•
PSE Tracking	•		•
Internet Access*	•		
Electronic Prescriptions	•	•	•
Printers	•		
Point-of-Sale System	•		•

*Access to online drug information.